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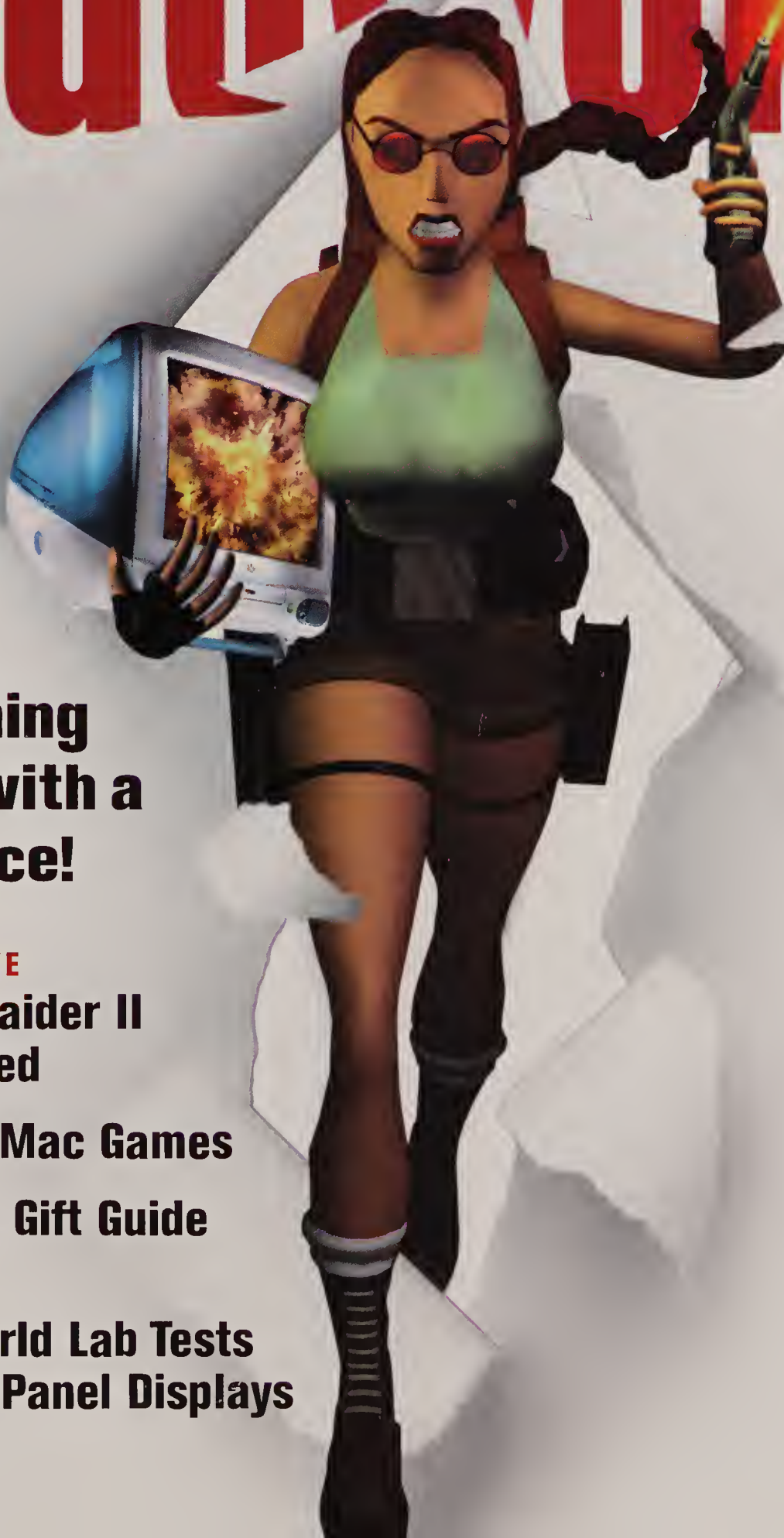
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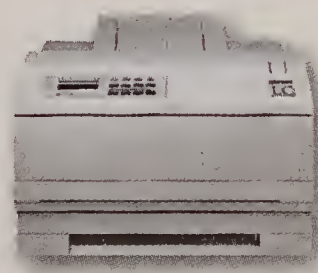
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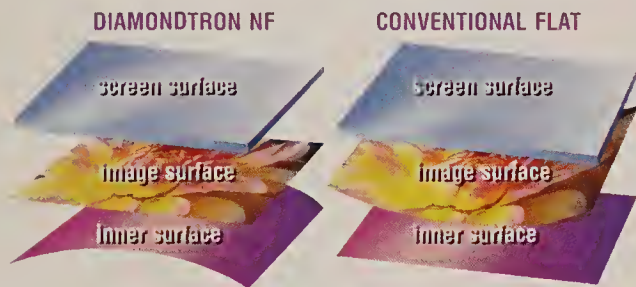
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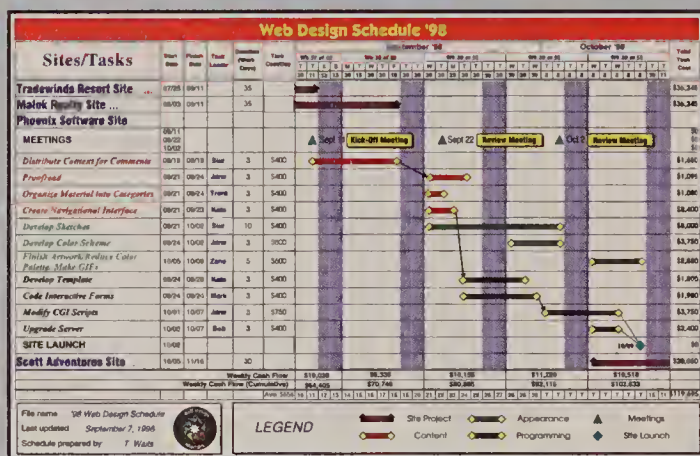
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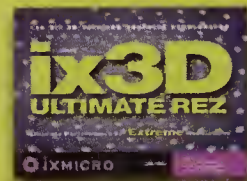
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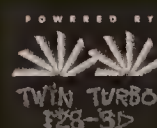
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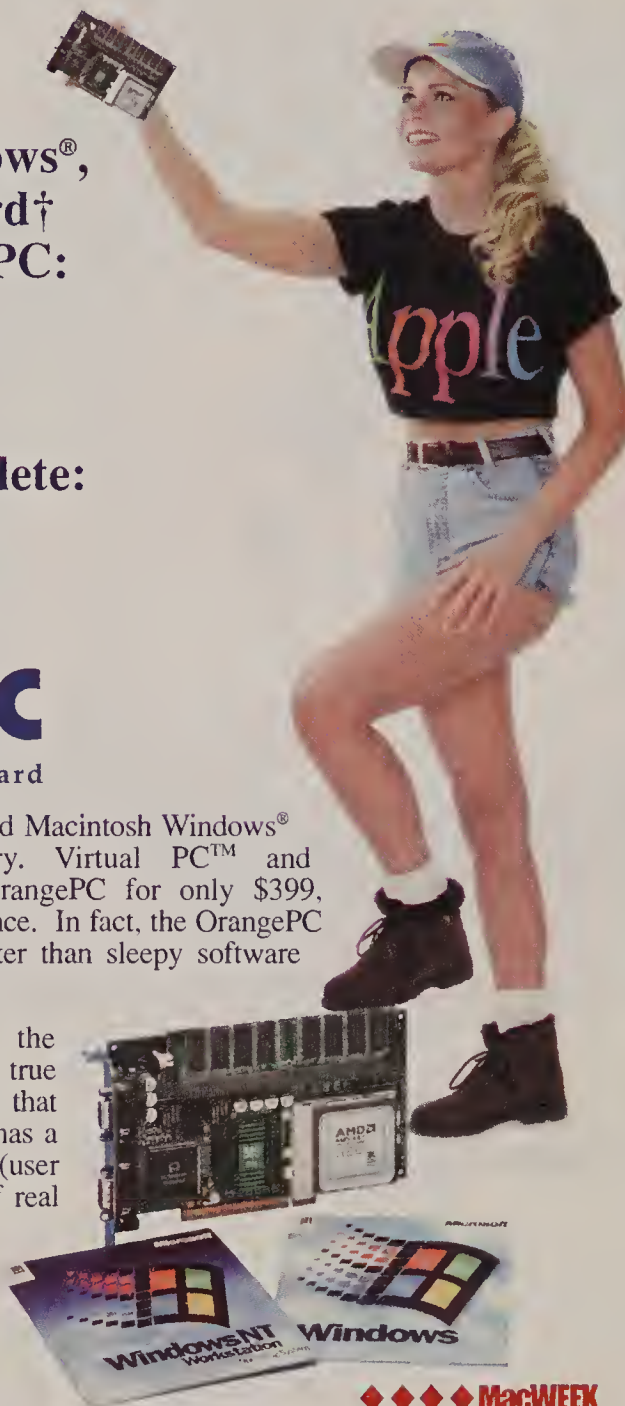
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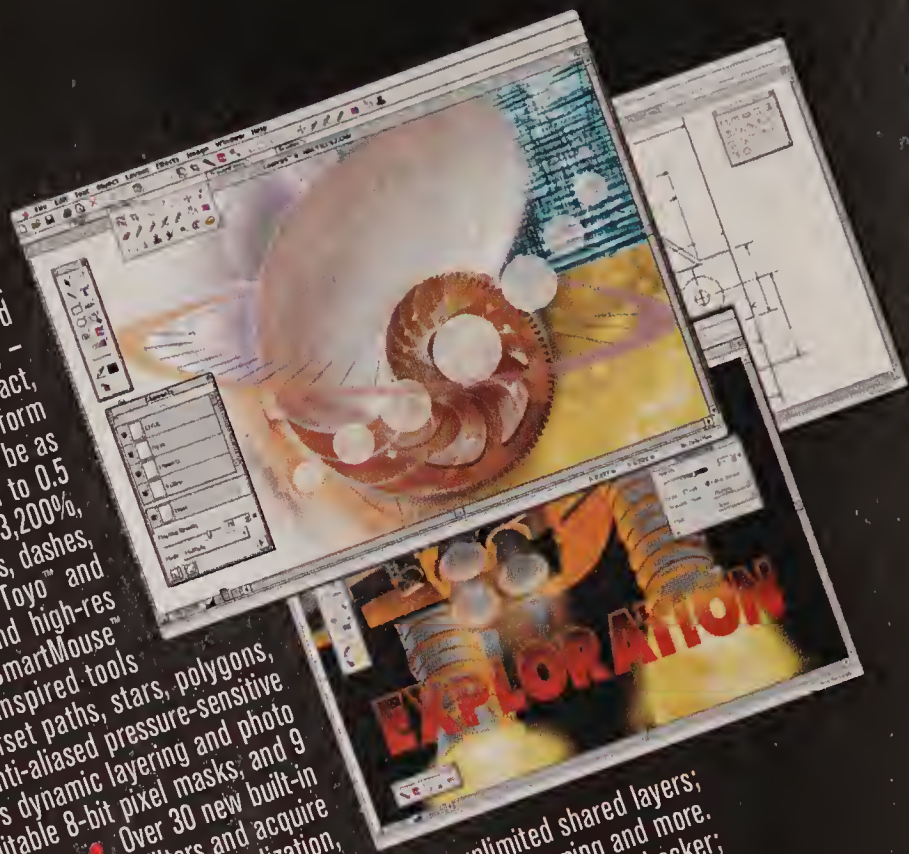


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Letters

Working Through Guilt

DAVID POGUE SHOULD KNOW that he's not the only one trapped in a love/hate relationship with Microsoft (*The Desktop Critic*, September 1998). I too have been converted by Internet Explorer 4's top-notch interface. In fact, as I read his article on Macworld Online, I stumbled upon yet another nice touch: as long as you're not in a text field, pressing the spacebar will page down and option-spacebar will page up.

JAMES MUSPRATT
West Roxbury, Massachusetts

UPON READING DAVID POGUE'S confessional column where he, like other Mac users, shamefully admitted the benefits of a Microsoft product, I decided to swallow my Netscape pride and try out Internet Explorer 4.01. After wasting an evening downloading the 12.4MB file and spending over an hour trying to open a Web page, only to have the program crash my Mac each time, I've decided that if anyone should feel guilty, it's Microsoft.

MARK CICHRA
Independence, Ohio

PowerBooks in Europe

TED LANDAU'S "ONLINE ON THE Road" (*Secrets*, September 1998) was a good discussion of what you need to think about when computing while traveling. But he states in the sidebar "Go Mobile, International-Style" that U.S. Mac users will have trouble using their PowerBook AC adapters in Europe, due to voltage differences. Not true—PowerBook AC adapters can use all voltages from 90 to 240 volts and line frequencies of 50Hz to 60Hz, thus covering all the European AC



systems. However, you will need a simple plug adapter, available at utility stores in many airports for around \$10.

JON AALBORG
Oslo, Norway

The Ongoing Slot Controversy

ANDREW GORE GOT IT EXACTLY right in pointing out Apple's misstep in dropping down to three slots in the high-end G3 machines (*The Vision Thing*, September 1998). My base configurations use a minimum of four PCI slots: two video cards, one ultrawide SCSI card, and a 100BaseT Ethernet card. This is a very common and necessary configuration in content creation as well as prepress. I'm anxiously waiting for the next-generation designs, and I hope that in the short term, my souped-up Umax S900's will hang tough.

JOHN STILL
Boston, Massachusetts

I'M BEMUSED BY ALL THE BLEATING from digital-video and other high-end-graphics professionals about the lack of six-slot G3's—especially when they complain about the expense or inconvenience of an external PCI chassis. Excuse me? This 1 or 2 percent of Apple's market, who supposedly have dollars to burn and would allegedly contribute so much to Apple's bottom line—they haven't got the money for an expansion chassis? Would they, if it came down to the crunch, rather change platforms—with the corresponding loss in productivity from retraining, the purchase of all new software, and increased IS needs—than buy and use an expansion chassis at a minute fraction of the cost? I don't get what all the fuss is about.

CHUAN CHEW
Sydney, New South Wales, Australia

Peeved about Premiere 5.0

JIM HEID IGNORED THE FACT that Adobe has chosen to *remove* a major speed enhancement from Premiere (*Reviews*, September 1998). Premiere 5.0 does not use its preview files when building final movies—which effectively doubles rendering time for video that has to be compiled.

Furthermore, he ignores Premiere's interface downgrade. Version 5.0's window adjustability is more limited, hindering interface customization. The Commands window no longer offers color coding or column-orientation options. The Controller is now locked to the Preview screen and is too large and cumbersome even at its smallest setting.

The most staggering omission of all is one I discovered in the first ten minutes

continues

CORRECTIONS

- *Freddi Fish is a she, and her friend's name is Luther, not Norman* ("Back-to-School Guide," Reviews, September 1998).
- *YankPro 2.0* (Reviews, October 1998) is from Mami Software (831/689-9314, www.mamisoftware.com).
- *Ambrosia Software's URL is www.ambrosiasw.com* ("Escape Velocity: Override," Reviews, October 1998).
- *Epson's PhotoPC 700 has a list price of \$699 and requires NiMH batteries* ("Focus On," October 1998).

of operation: all transitions render three to five times slower than in version 4.2.X. Add this rendering slowdown to 5.0's inability to utilize preview files, and I can't even calculate the overall addition of hours to a project.

JOE AMADEO
Pleasant Hill, California

Yes, it's true that *Premiere 5.0* doesn't use preview files; this is caused by a bug that will be fixed in a maintenance release that Adobe plans to ship before the end of the year. As for the Controller, you can unlock it from the Monitor window by clicking on the collapse button. Beyond that, *Premiere 5.0's* interface is greatly improved over earlier versions'. The ability to hide and collapse audio and video tracks, the fast-editing convenience of the new Monitor window, and the new Navigator window—these are all terrific, timesaving enhancements. Spend some time learning the new interface, and I'm sure you'll find it preferable to 4.2's. *Premiere 5.0* is indeed, however, often noticeably slower than 4.2, as the review pointed out. Adobe claims that the maintenance update will address these performance problems.—Jim Heid

Tip Troubles

I ENCOUNTERED SOME PROBLEMS with tip number 16, "High-Powered Launcher" ("Macworld's Top Tips," September 1998). When the Recent Documents folder is moved out of the Apple Menu Items folder, it is immediately replaced by the system. The folder moved to the Launcher Items folder is a non-updating list of the items used at the time

the move was made. This is, obviously, not helpful. Is this tip Mac OS 8-dependent? It sure doesn't work in 7.6.

D. B. AULD
Coventry, Rhode Island

Mea culpa. You're right—this tip did work, and now, bizarrely, it doesn't. Allow me to atone by offering up an entire Web page of extremely dazzling tips and tricks, all of which actually work. They're at www.macworld.com/more/.—David Pogue

Sound Advice for PowerPoint

IN "POWERPOINT GOES INTERACTIVE" Jim Heid recommends dragging the sound icon off the edge of the slide layout in order to hide it (*Create*, September 1998). This is not necessary. Instead, once you've added a sound and selected its Timing in the Custom Animation window, click the Play Settings tab, and check the box for Hide While Not Playing. You still see the icon in edit mode, but not while your presentation is playing.

Concerning playing a portion of a track from an audio CD during your presentation, I found that if you want to add a section of audio from the middle of a track, the application takes so long to search for the clip that the flow of your presentation is compromised. Instead, I use a tip from Lon Poole's book *Mac OS 8 Bible* for adding audio-only QuickTime movies. This still adds to your file size, but a 1-minute, 16-bit stereo clip adds only 10.1MB to your presentation, versus 47.1MB for the 4:40 track from which I selected the clip.

ALICIA CHASE
Cadyville, New York

You're correct about my sound-icon tip—this was a necessary technique for the beta version of Microsoft PowerPoint 98, but the final shipping version has the handy Hide While Not Playing check box. As for sound-only QuickTime movies, they are certainly a viable option. Of course, you can also avoid slow performance when taking the audio-CD route if you play tracks only from the beginning.—Jim Heid

Wanting More on Linux

ALTHOUGH YOUR REVIEW OF Tenon's Power MachTen was informative, it implied that MachTen was the only Unix environment available for the

Power Macintosh (*Reviews*, September 1998). Not one, but *two*, versions of Linux have been available for the Power Mac for some time now: MkLinux, the microkernel version, and LinuxPPC, the monolithic-kernel version. Both have brand-spanking-new releases (check out www.mklinux.apple.com and www.linuxppc.org). And unlike MachTen, both are free—with their source code freely available. Yet nary a peep about either Linux has emerged from *Macworld*. What gives? An in-depth look from you guys on these rock-solid alternative operating systems is way overdue.

DAN CAUGHERTY
Research Triangle Park, North Carolina

Web-Server Dissension

I DISAGREE WITH THE COMMENTS and ratings you gave to WebTen and Quid Pro Quo Plus (QPQ) server software (*Reviews*, September 1998). I've tried to install three successive versions of WebTen on my server, and none worked within a reasonable amount of troubleshooting time. On the other hand, QPQ took two minutes to install. I also wonder how you came up with QPQ's lousy performance in your benchmark. I gave QPQ 20MB of RAM and a 10MB cache, set the Tasking Time and Sleep Time to Best Performance (in QPQ's Global Settings), and left QPQ as the front-running application on the server (QPQ is substantially slower when running in the background). And I got great performance—certainly much better than that of Apple's Personal Web Sharing. The server is stable and user-friendly—and the regular version of QPQ is free. I would recommend QPQ over its competitors for all but the largest Web-site applications. But you are right about QPQ's support—it stinks. The good thing is, you don't need it.

ETIENNE DOUAZE
Singapore

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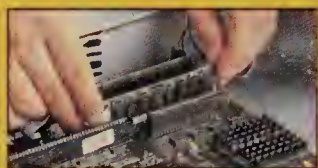
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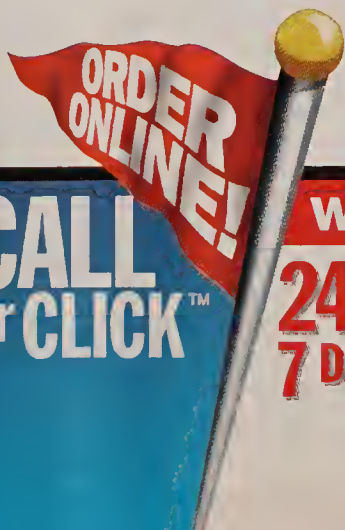


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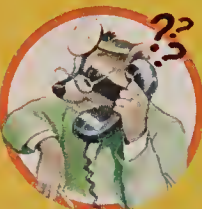


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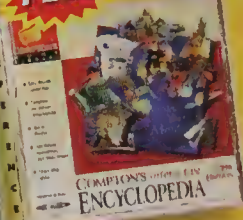
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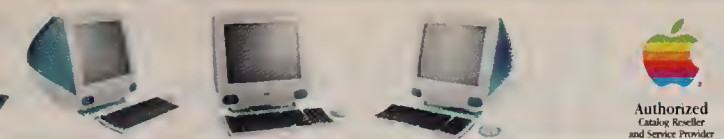
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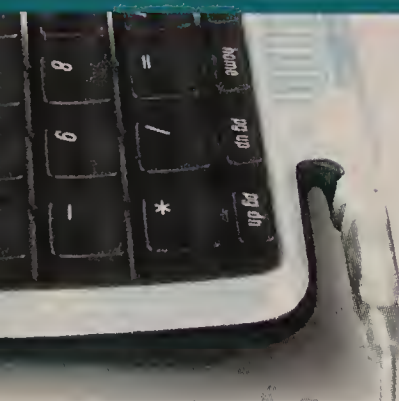
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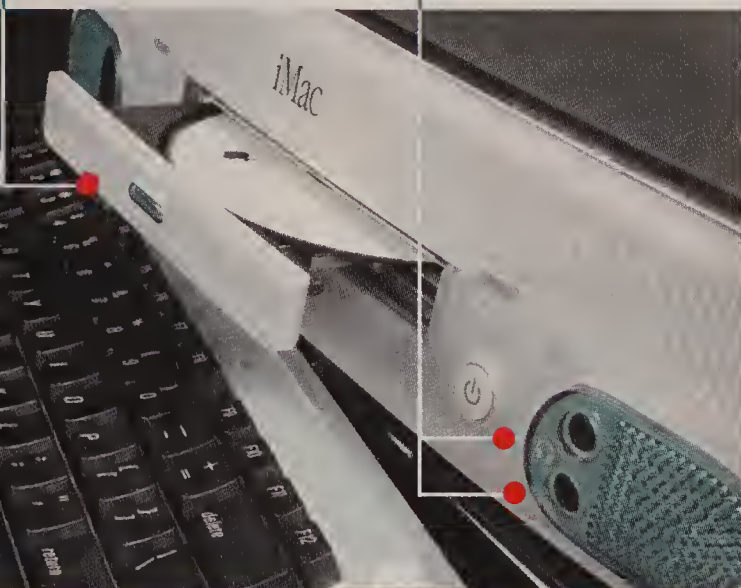
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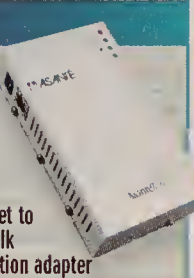
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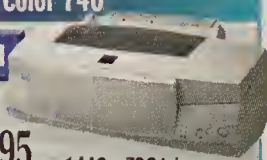


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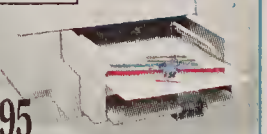


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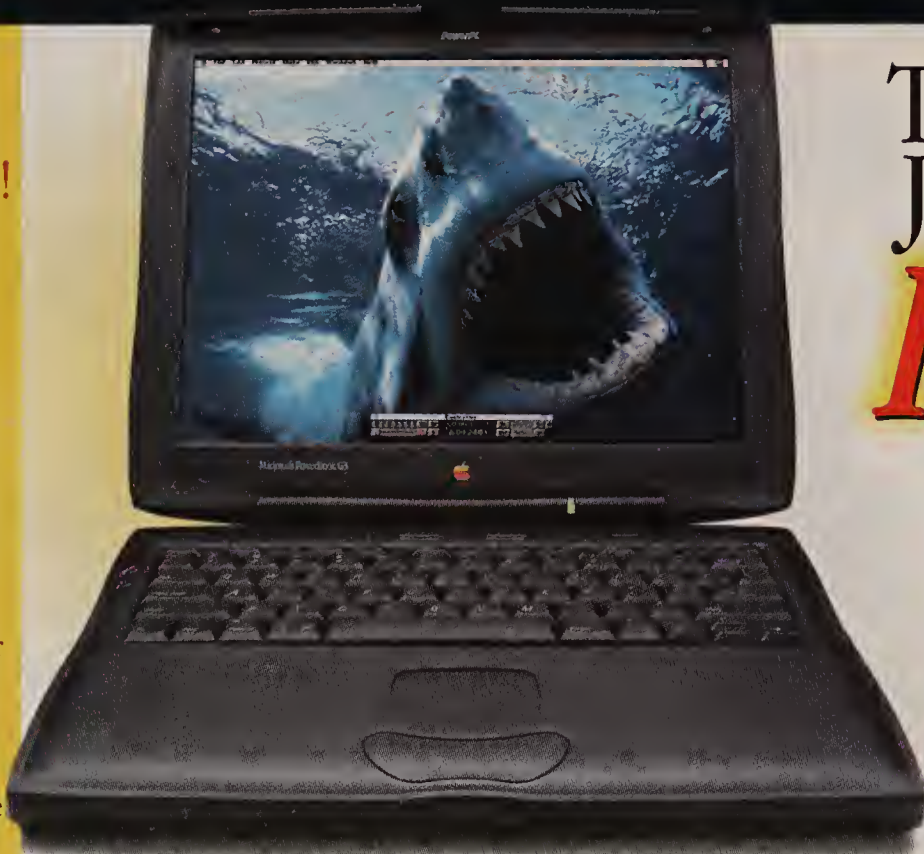
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BusinessWeek Magazine calls the new PowerBook G3 line
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JULY 1998

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APPLE POWERBOOK® G3

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103558	G3/233MHz	512K	12.1" TFT	32/192MB	4MB	2GB	56K	20X	7.6lb	Y	Y	2299*
104250	G3/233MHz	512K	14.1" TFT XGA	32/192MB	4MB	2GB	56K	20X	7.6lb	Y	Y	2799*
104251	G3/266MHz	1MB	14.1" TFT XGA	64/192MB	4MB	4GB	56K	20X	7.6lb	Y	Y	3499*
104252	G3/300MHz	1MB	14.1" TFT XGA	64/192MB	4MB	8GB	56K	DVD	7.6lb	Y	Y	4999*

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ViewSonic

39386 Optiquest Q53 15" Monitor**\$189**
39387 Optiquest Q71 17" Monitor**259**
43960 Optiquest V9S 19" Monitor**549**
54160 Optiquest V115T 21" Monitor**1049**

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101177 Asanté Talk Adapter**\$94.95**
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57994 Asanté Fast 10/100 PCI Adapter S pack**239.95**
100082 FriendlyNet 10/100 4-Port Switch**199.95**
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100084 FriendlyNet 10/100 16-Port Switch**1149.95**
49859 FriendlyNet 8+2 Switch for Small Networks**329.95**
49858 FriendlyNet 8+2 Switch Plus**329.95**
49585 FriendlyNet 10BaseT Hub w/5 RJ45 Ports**46.95**
38297 FriendlyNet 10BaseT Hub w/8 RJ45 Ports**54.95**
2772 Asanté 10BaseT Hub 12 Port**146.95**

18906 Asanté 10BaseT Hub 24 Port**229.95**
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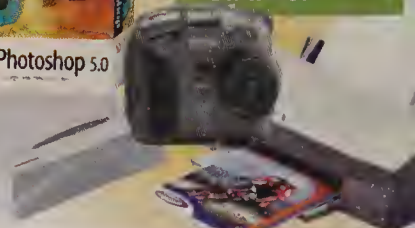
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101111	G3/300 Desktop	G3/300MHz	64/768	6.0GB; IDE	2MB/6MB	1MB/150MHz	3PCI /1 bay	24X	Y	—	1999
103556	G3/266 Desktop	G3/266MHz	64/768	4.0GB; IDE	6MB/6MB	512K/133MHz	3PCI /1 bay	DVD	—	56K Modem	1749
101746	G3/300 Minitower	G3/300MHz	64/768	8.0GB; IDE	6MB/6MB	1MB/150MHz	3PCI /1 bay	24X	Y	Video In/Out	2399
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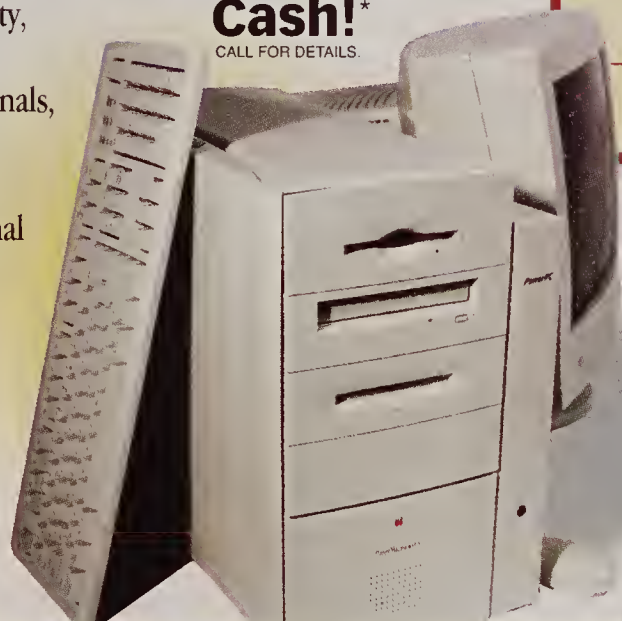
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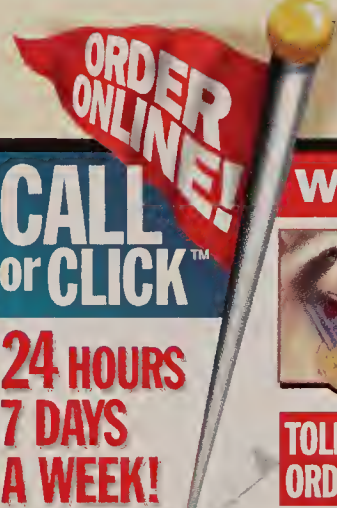
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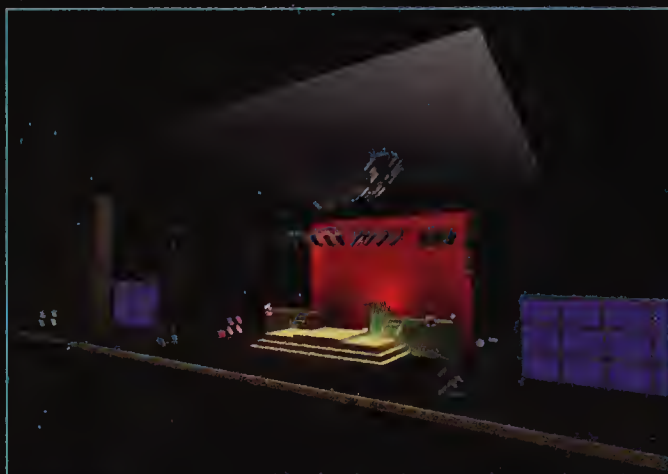
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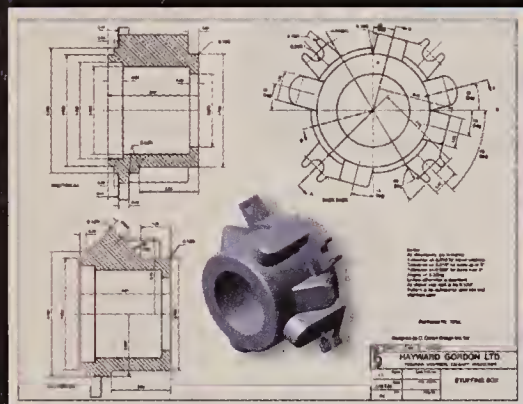
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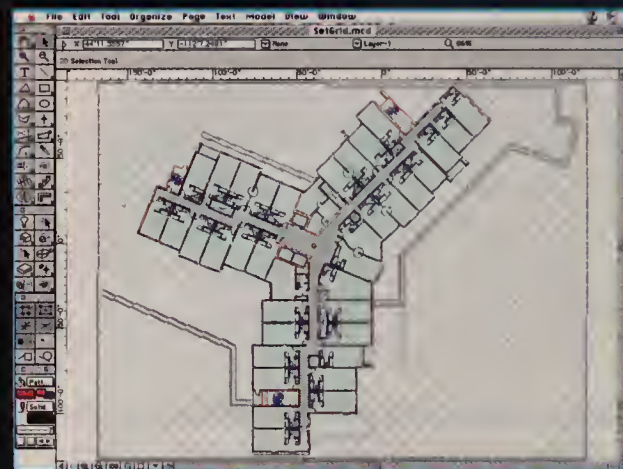
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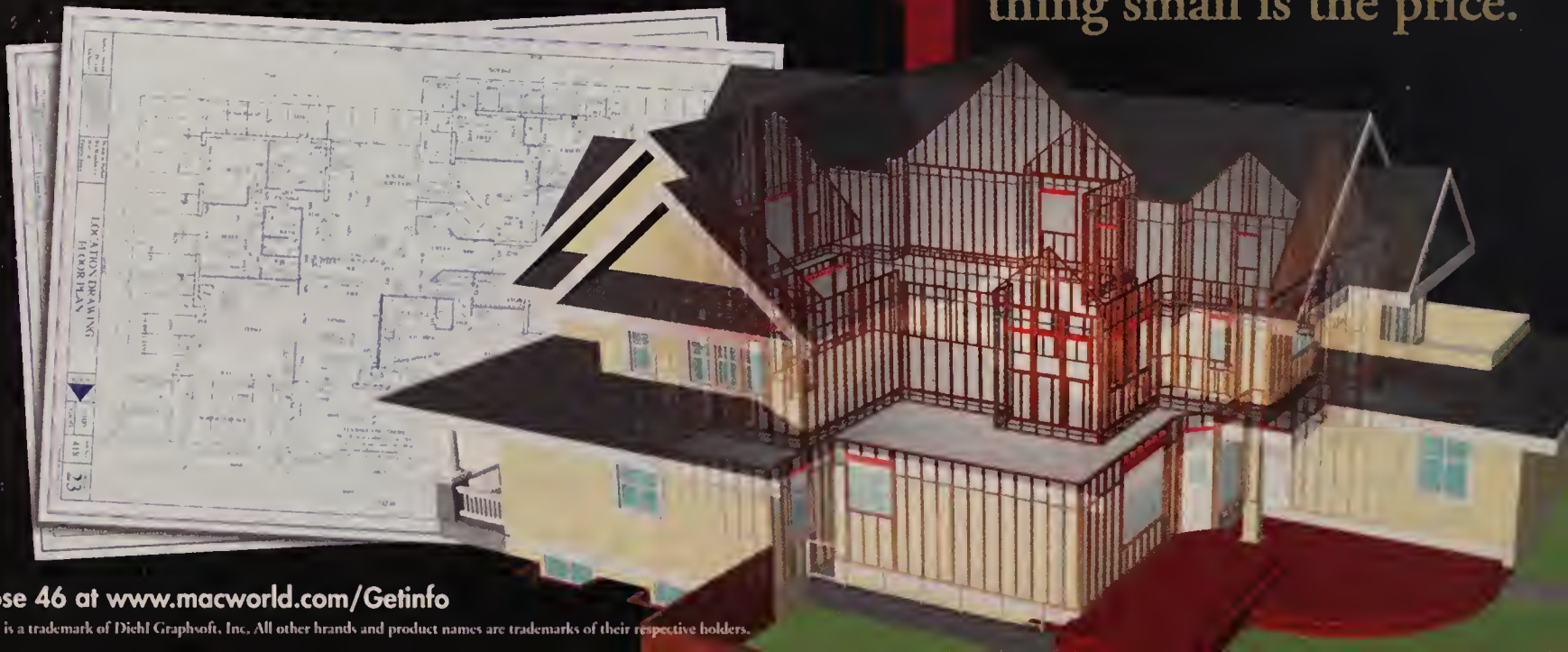


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The Vision Thing

by Andrew Gore

Macs Get With the Game

1998 ELEVATED MAC GAMING TO A NEW LEVEL. BUT THERE'S STILL ROOM TO IMPROVE.

THERE'S NO QUESTION that 1998 will go down as a watershed year for Macintosh gaming. Twelve months ago, before Apple's turnaround became the stuff of business legend, there was serious doubt

as to whether any game developer would do anything new on the Macintosh again. But here we are with the holiday season upon us, and we have the single-best library of cool Mac games to choose from in the history of the platform (see "20 Unforgettable Games," in this issue).

But lest we forget, Philip Dyer's "Game Hall of Shame" (see *The Game Room*, in this issue) reminds us that we still have a long way to go before Mac gaming is on a par with PC gaming. As always, I have a few humble suggestions on how Mac gaming can catch Wintel gaming and—who knows?—maybe even surpass it.

More versus Better

Which would you rather have: a lot of games or the *best* games? If it's the latter—which it should be—then don't be too threatened by the sheer volume of games on the PC platform. Let's not mince words here: all too many of those PC games are nothing more than rip-offs of other PC games. Doom clones, Tomb Raider clones, WarCraft clones. Sure, some games succeed in improving on the original—Quake, for example, is a vast improvement over Doom—but most do little more than demonstrate that imitation isn't always flattering; sometimes it's just repetitive.

Of course, there are plenty of games on the PC that aren't knockoffs—they're just bad. Once you filter out the poor copies and the bad originals, what you have left is a precious few PC games that are really worth the plastic they're burned into.

And therein lies the challenge: those great games still come out first for the PC, and if they ever come to the Mac,

their arrival often takes months (our cover girl, for example, stars in a game that has been available for PCs for over a year). Rather than try to convince every game developer to do a Mac version, Apple should focus on the hottest studios and ensure that the best PC games arrive on the Mac *simultaneously*.

Timing Is Everything

The reason for doing simultaneous releases is simple: publishers put a lot of marketing money behind the launch of their major games, which means that the developers' best opportunity to pick up the maximum number of Mac sales is to

that if it's an accurate simulation of what the sport is like, most trophy bucks must die of boredom.

But I digress. The point is that Apple must be selective in persuading mainstream developers to publish their games for the Mac. Because if too many of the wrong titles are brought to the platform—and therefore fail—game developers will once again shy away from shipping Mac games.

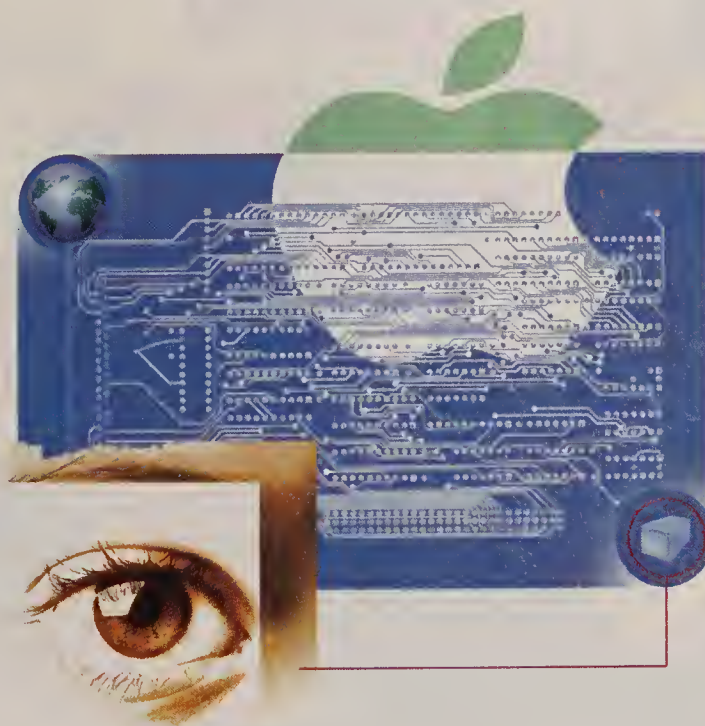
Mac First

Which brings me to an all-too-often overlooked strength of the Mac gaming market: cost of entry. To put it bluntly, sometimes it's better to be a big fish in a small pond. It can cost a small fortune to launch a new game in the PC market and get any attention. Contrast this with launching a game for the Mac platform, where the size of the market and the relatively small number of distribution channels make the cost of entry much lower. The Mac market essentially amounts to a great incubator for new games. There's even a precedent showing that this can work: Bungie, creator of breakthrough games such as *Marathon* and *Myth*, started as a Mac-only game developer during one of the

weakest moments in Mac gaming. Thanks to the excellence of its products, Bungie built up a solid business that was eventually strong enough to go cross-platform—and succeed.

As you can see, things are looking up for the Mac gaming market. Let's just hope Apple can continue its efforts to make the Mac into a compelling place to introduce the hottest new games. If it does, then 1999 will be a very good year, indeed. **m**

Andy "High Score" Gore is taking feedback (and Tomb Raider tips) at visionthing@macworld.com.



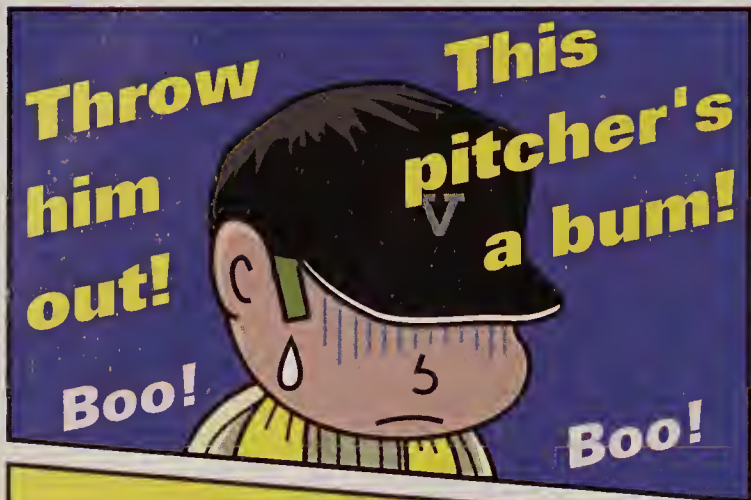
strike when the overall buzz about the game is loudest.

Of course, the trick for Apple is to encourage the right publishers to bring the right games to the Mac. It can be hard enough to pick the winners before they leave the starting gate, but the subtle differences between Mac and PC gamers make it even more difficult. As Philip Dyer points out in "Game Hall of Shame," runaway PC hit *Deer Hunter* is selling sluggishly on the Mac. No wonder: the game is mediocre in terms of graphics and game play, and let's just say

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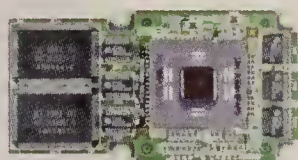


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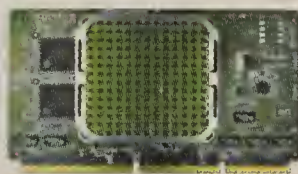


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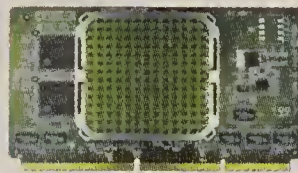


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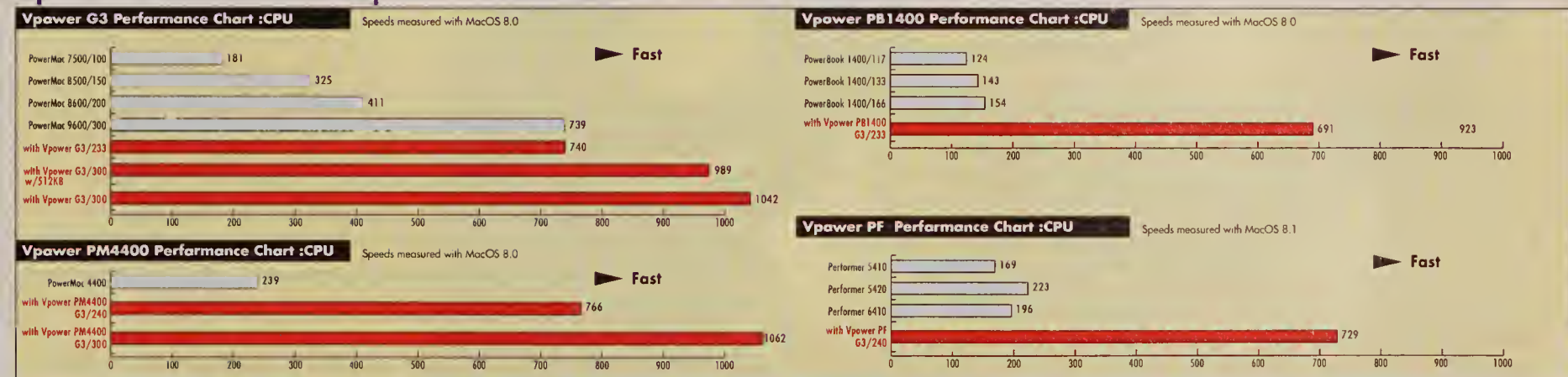


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Vpower G3/233	Power Mac 7300,7350,7500,7600,8500,8550,8600,9500 UMAX S900,S910	G3/233MHz	512KB/117MHz	\$ 389
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Let Your Browser Do the Walking

SMART BROWSING FINDS
INFORMATION BEFORE
YOU KNOW YOU NEED IT

by Cameron Crotty

Your Internet experience is hardly complete unless you've spent hours wading through multiple search engines. But Netscape claims that the next release of Communicator—version 4.5—will do much of the legwork for you. Meanwhile, Microsoft is beginning to release preliminary details about the next version of Internet Explorer.

Smart Browsing The next version of Navigator—currently available as a preview version on the Netscape Web site—will use the company's own databases and Web indexes to implement what the company calls Smart Browsing. One Smart Browsing feature, What's Related, attempts to quickly guide you to alternate sources of information. When you click on the What's Related button, Navigator automatically checks the current URL against Netscape's NetCenter databases and provides links to information and services related to the site you're currently viewing.



Another Smart Browsing feature, Internet Keywords, lets you use Navigator's Location field to find Web sites based on keywords in addition to URLs. For instance, typing "ford ranger" into the Location field automatically lands you at the Ford Ranger page of Ford's Web site.

Get the Messenger Netscape's Messenger e-mail/newsgroup client sports a

three-pane interface with folders and newsgroups on the left side of the screen, similar to the presentation in Microsoft's Outlook Express. Other Messenger enhancements include improved message-search and filtering options, a revamped address book, and the ability to synchronize Messenger addresses with a 3Com PalmPilot.

Communicator 4.5 will

also add a new feature called Roaming Access, which stores your profile (including preferences, bookmarks, and address books) on a directory server. You can then log on to the server from multiple machines—even a borrowed computer—and access the Web, and your e-mail, as if you were using your personally configured browser.

continues



Color Separations from Your Desktop

AN IMAGESETTER FOR \$6,995? NOT EXACTLY, BUT THE Accel-a-Writer 3G, from Xanté (334/342-4840, www.xante.com), when used in combination with Xanté's FilmStar 2 processing unit, can produce color separations on positive or negative film with 175-line halftones (by comparison, the halftones you see in *Macworld* are printed at 133 lines). Xanté describes the output as "near imagesetter quality." Maximum output size is 13 by 35.5 inches.

How does it work? Xanté took a Fuji-Xerox laser engine, boosted the resolution and halftone capabilities, and added software that compensates for the printer's tendency to shift images on the page. You can also produce film separations on the company's PlateMaker 3 printer. Once you've made the film, you run it through the FilmStar 2 processor, which increases toner density to improve image quality. The Accel-a-Writer 3G also functions as a PostScript 3 monochrome laser printer.—STEPHEN BEALE

To make maintenance easier for IT managers, Netscape has added a Roaming Access control to the Mission Control desktop, a centralized application for managing Netscape clients and servers.

As of December, the company had not announced when the final version of Communicator 4.5 would be available.

Microsoft Hedges As this article was going to press, Microsoft was beginning to release details about the next version of Internet Explorer for Windows. Early documents published for developers indicate that the company will improve the browser's page-rendering performance, particularly for Dynamic HTML. The documents also

indicate that Explorer 5.0 will support XML (Extensible Markup Language) and will extend the capabilities and accessibility of both Cascading Style Sheets and Dynamic HTML.

The new version of Explorer will also allow other developers to create what Microsoft calls "browser-less applications"—Internet applications built from HTML, ActiveX, and Java that don't use the standard browsing-software interface. However, bear in mind that Microsoft maintains separate development teams for its Macintosh products, and the existence of a feature on the Windows side is no guarantee that the feature will appear in the next Mac version.

graphics

Vendor Brings AppleScript to Photoshop

PHOTOSCRIPTER ALLOWS AUTOMATED IMAGING

by Stephen Beale

Adobe Photoshop has long been among the primary graphics tools for publishing professionals. However, through all the program's many revisions, it has never supported AppleScript. You could automate many Photoshop functions by using the Actions feature, introduced in version 4.0, but this was only a partial solution for publishers looking for the customization that only a full scripting language can provide.

Publishers may now have the answer in Photoscripiter, a Photoshop plug-in from Main Event Software (202/298-9595, www.mainevent.com) that brings AppleScript support to the popular image-editing program. When you run the plug-in, it presents a dictionary of AppleScript commands that represent 75 to 80 percent of Photoshop functions. You can then write scripts that automate these functions.

More Action Photoshop's Actions feature provides a simple way to create macros that automate repetitive operations. But scripts created in Photoscripiter can go much further. Because AppleScript supports such programming techniques as loops and conditional branches, you can write scripts that intelligently process images. For example, you could write a script that scales images by 50 percent

unless they are smaller than 400 by 300 pixels.

AppleScript's other big advantage is its ability to communicate across multiple applications. Many publishers have created custom production environments with scripts created for QuarkXPress. With Photoscripiter, publishers can now incorporate Photoshop into these custom workflows.

A Few Hiccups Photoscripiter does have some limitations, primarily the 20 to 25 percent of Photoshop functions that it does not support. You can't control tool settings, most preferences, or features accessed through the Print dialog box. You can control filters and other plug-ins that are installed with Photoshop, but third-party filters, such as those from Extensis and Alien Skin, are not supported—at least for now.

Photoscripiter is scheduled to ship by the time you read this. Final pricing has not been set, but Main Event will offer it for \$299 under an introductory promotion.

display

Projectors Get Slimmer and Cheaper

NEW MODELS INCLUDE

A 4.9-POUND UNIT

by Michael Gowan

Forget the slides. The latest multimedia projectors are lighter, smaller, and less expensive than ever before. One vendor, Lightware (503/641-7873, www.lightware.com), plans to ship a 4.9-pound projector this November, and InFocus (503/685-

8888, www.infocus.com) has announced a slightly heftier unit that pumps out 700 ANSI lumens for added brightness.

New projectors from Boxlight (360/779-7901, www.boxlight.com), Sanyo (818/998-7322, www.sanyoled.com), Sharp (201/529-8200, www.sharp-usa.com), and CTX Opto (408/541-6060, www.ctxopto.com) weigh in at about 10 pounds, and the heavyweight of the bunch—the PowerLite 5300, from Epson (310/782-0770, www.epson.com)—is still a relatively svelte 13.7 pounds. All of these projectors offer 800-by-600-pixel resolution.

A New Beetle The Lightware projector—code-named Beetle—achieves its slim dimensions by using a single 1.6-inch LCD panel. The \$2,995 unit produces 400 to 500 ANSI lumens, suitable for most low-light conference rooms.

If you want something brighter—and don't mind if it's a little heavier—In Focus's \$5,999, 6.8-pound LP425 produces 700 ANSI lumens using Texas Instruments' digital light-processing technology, an alternative to the LCDs used in many other projectors.

Triple Triple Three new projectors—each sporting a trio of 0.9-inch LCD panels for added brightness—weigh in at just under 10 pounds. Boxlight's CP10T—tentatively priced at \$4,399 at press time—produces 600 ANSI lumens and features a built-in PCMCIA slot, allowing you to store your presentation on a PC Card. Sanyo's \$6,995 PLC-SU10N also has a PCMCIA slot; the projector produces 550 ANSI lumens. Sharp's \$6,295 Notevision4 produces 600 ANSI lumens.

Budget-conscious presenters who don't mind some extra heft may want to look at the \$2,995 EzPro 585, from CTX Opto, which weighs slightly more than 10 pounds. Due this November, the projector uses a single-panel, 6.4-inch LCD and has a brightness of 500 ANSI lumens.



Lightware's Beetle weighs 4.9 pounds.

High Lumen-essence If brightness is more important to you than a slim design, check out Epson's 13.7-pound PowerLite 5300, which produces 1,200 ANSI lumens. It is scheduled to ship this October for \$8,499.

graphics

Adobe Grows Web Turf with ImageStyler

SOFTWARE BASED ON ILLUSTRATOR TOOLS

by Stephen Beale

Adobe Systems recently announced new versions of PageMill and Illustrator and used the Seybold San Francisco show to preview K2, its next-generation page-layout program. But the graphics-software giant—smarting from poor financial performance and an aborted takeover bid by Quark—has

provided the biggest hint of its long-term product strategy with the introduction of ImageStyler, a \$129 program that brings Illustrator-like capabilities to Web-graphics creation. It is scheduled to ship by year's end.

For Business Targeted at what Adobe describes as the creative business user, ImageStyler makes it easy to create and modify such standard Web-site elements as buttons, navigation bars, and ad banners. Many of these objects are used multiple times in a Web site; much of ImageStyler's power lies in the program's use of object styles to simplify updating of such repeating elements.

The styles define the look of the object and can include a wide range of attributes: color, gradients, opacity, texture, 3-D effects such as bevels and embossing, and distortion effects such as swirl and spherize. You can apply these attributes in any combination on up to five layers, which can be copied from one style to another.

One you've applied the styles to your graphics, you can quickly change the look of an entire Web site by modifying the style or applying different styles to the objects. The package includes more than 100 preset styles.

Simple JavaScript ImageStyler also makes it easy to create JavaScript rollovers in which buttons change their appearance based on mouse actions. You simply define the graphic's appearance for the mouse-over or mouse-down actions, and the program creates an HTML page with the appropriate JavaScript code. The program also eases creation of image maps with embedded HTML links.

Once you've defined your graphics, you can export them—with optimized color

continues

Transparent Illustrator As Adobe prepares to ship Illustrator 8.0, software vendors are fast on its heels with plug-ins that add transparency capabilities to the illustration program. Hot Door's (530/274-0626, www.hotdoor.com) \$39 **Transparency 1.0** changes Illustrator art into live transparency lenses. Lucid Dream Software's (847/202-8424, www.luciddream.com) \$45 **TransparencyFX 2.0** lets you create lens effects between two objects; lenses in the previous version worked only with placed images. The software also creates transparent masking effects.

Pantone's (201/935-5500, www.pantone.com) **ColorReady** is a \$139 color-management package consisting of a QuarkXTension for QuarkXPress, a plug-in for Illustrator, and an Xtra for Macromedia FreeHand. Each plug-in provides a color-preview window showing how spot colors will look before they are printed.

Migrating Macs Miramar Systems' (805/966-2432, www.miramarsys.com) **PC Migrator** is an \$89 file-transfer utility for PC MacLAN. It moves Mac files to a Windows 95, Windows 98, or Windows NT computer, attaching appropriate extensions and deleting illegal characters en route.

Native Norton It's PowerPC-native and it's here. Symantec (541/334-6054, www.symantec.com) is shipping **Norton Utilities 4.0 for Macintosh**, a long-awaited

continues

Product WATCH

upgrade to the \$99.95 disk-repair utility that supports Apple's new HFS+ format. The current release requires a PowerPC CPU; Symantec says it will ship a version for 68040 systems by year's end.

Milder Commotion Puffin Designs' (415/331-4560, www.puffindesigns.com) **Commotion LE** is a stripped-down, \$795 version of Commotion, the company's \$2,495 video-painting software. It includes the painting, cloning, and video-playback features of its high-end sibling but lacks the latter's wire-removal tool, complex rotosplines, and motion-tracking functions. It's also limited to a maximum frame resolution of 768 by 576 pixels.

Store More SyQuest (510/226-4000, www.syquest.com) announced a SCSI version of its 1GB **SparQ** removable-cartridge drive and said that it plans to ship the previously announced SparQ USB drive this November. Each drive sells for \$249; a three-pack of 1GB cartridges sells for \$99.

Font Fixer Insider Software (760/804-9900, www.insidersoftware.com) has replaced Font Box, its font-maintenance utility, with **FontAgent 2.7**. The new version lets you recover unstable font sets and provides hot links to the company's Web site for the latest documentation and technical support. The standard single-user version costs \$69.95. The \$29 Limited Edition analyzes fonts on a single hard drive.

—EDITED BY MICHAEL GOWAN

palettes—in a variety of image formats. You can also export entire layouts as HTML pages for editing in Adobe PageMill or another authoring tool.

Following on the heels of ImageReady—a \$299 image-creation program based on Photoshop—ImageStyler is Adobe's latest attempt to leverage its key software assets for the production of Web graphics. As the company struggles to improve its financial performance, don't be surprised to see similar attempts in the future.

storage

New SCSI Standard Introduced

ULTRA160/M SCSI TO
DOUBLE DATA SPEED

by Macworld Staff

The computer industry may be buzzing with talk of FireWire and the Universal Serial Bus (USB), but there's still life in one of the tried-and-true hardware interfaces: SCSI. A group of well-known peripherals vendors has announced support for Ultra160/m SCSI, a new standard that promises up to twice the speed of Ultra2 SCSI, currently the fastest version of the technology.

Ultra160/m SCSI—the number stands for the interface's maximum throughput of 160MB per second—is an implementation of the Ultra3 SCSI standard recently ratified by the SCSI Trade Association. Vendors announcing support for Ultra160/m SCSI include Adaptec, Fujitsu, Hewlett-Packard, LSI Logic, and Quantum. Ultra160/m SCSI is

a subset of Ultra3 SCSI, but given its critical mass of support, the former is likely to become the industry's preferred implementation. The first Ultra160/m SCSI products should appear by 1999.

Ultra160/m SCSI has three key features: double-transition clocking, which increases data-transfer speeds by utilizing the connection more efficiently; cyclical redundancy checking, which improves data protection; and domain validation, which provides a way of testing storage networks. The latter feature will enable vendors to develop products that intelligently scale their performance to the network's capabilities; if the network appears unreliable, an Ultra160/m

SCSI device can reduce transmission speed to ensure accurate data throughput. The interface is backward compatible, so you'll be able to run current SCSI devices with future Ultra160/m SCSI boards.

Apple's Take Apple has committed to FireWire and USB as its future hardware interfaces—the former for peripherals that require high-speed data transfer and the latter for most everything else. So don't expect to see Ultra160/m SCSI as a built-in feature for your Mac. However, you can expect that vendors will introduce Ultra160/m SCSI PCI cards that enable Macs to use forthcoming storage devices that support the new standard.

News



Workstation Features Rear-Projection Display

YOU'VE HEARD OF REAR-PROJECTION TELEVISION, BUT a rear-projection computer display? The \$7,495 Collaboration Station, from Lumavision Display (650/917-1144, www.ldisplay.com), combines a height-adjustable, 72-by-48-inch desktop with a 40-inch-diagonal rear-projection screen driven by the InFocus LP425 LCD projector. Designed for use by artists working in collaboration, it can be outfitted with optional speakers and LCD monitors. The display offers 24-bit, 800-by-600-pixel resolution and also runs video from DVD drives, VCRs, or other sources. The projector can be removed for use as a stand-alone presentation device.—MACWORLD STAFF

Surviving in a Windows world just got easier.



Upgrade to award-winning MacLinkPlus® Deluxe 10.0.

Being a Mac user in a Windows world can be a pain. But with MacLinkPlus Deluxe 10.0, it couldn't be easier. Just double click on a Windows file or use the sleek, new user interface and your pain is gone.

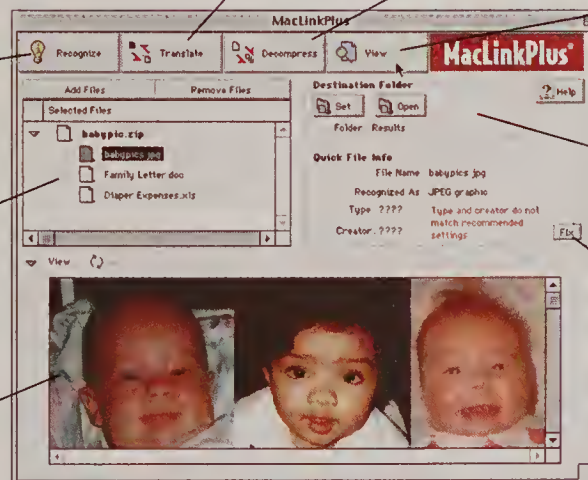
Translate the latest Windows files into Macintosh formats – or vice versa. Translate one file or a whole folder full of files at once. Files retain their original formatting.

Decompress files created using popular compression formats, including StuffIt, Compact Pro, Zip, Gzip and Z.

Get important information on selected files, such as file format, size, creation & modification dates.

Select a file or group of files to recognize, translate, decompress or view.

View files quickly, without opening the application that created them.



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Select a folder for translated documents. Then open this folder and access translated documents with just one click!

Files with incorrect Types & Creators cause problems when double-clicked. Solve problems simply by clicking "Fix" then double-clicking the file to open it in the proper application.

The #1 selling survival kit for Mac users in a Windows world just got better. Isn't it great to know there's a software company as committed to Mac as you are?

For more information and to order, call 1-800-270-0030 ext.133.

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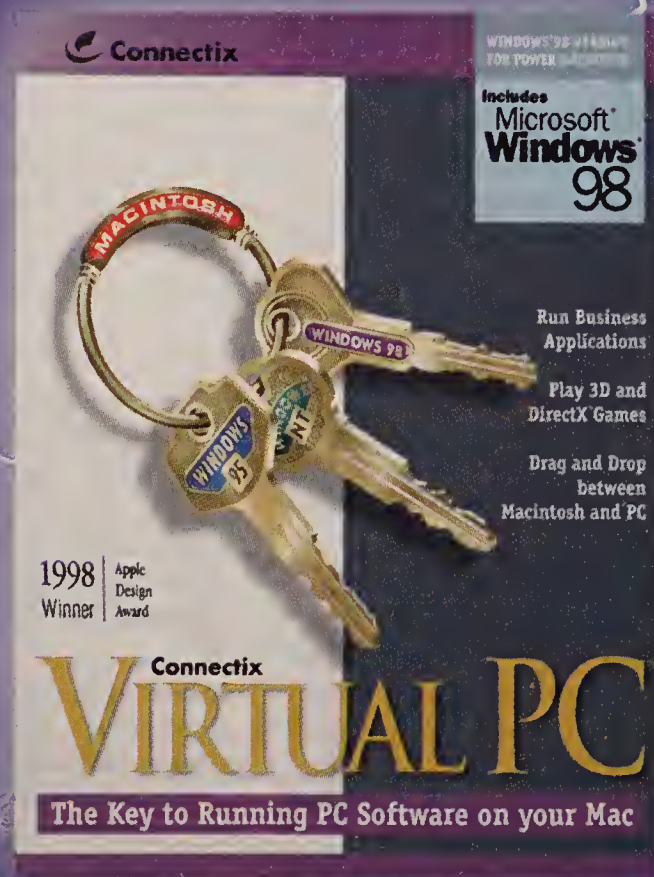
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Got iMac?



Available in 3 versions

DOS

Windows 95

Windows 98

Now your iMac can do Windows™

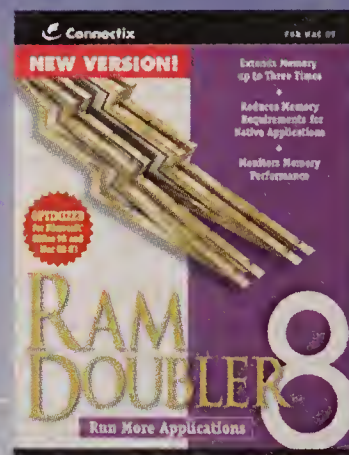
Get the best of both worlds! Use the Mac you love *and* the PC software you need. With Connectix Virtual PC, you can run the latest PC software, including business, games and home applications, on your iMac.

Get Connectix!

All Mac OS 8.5 compatible

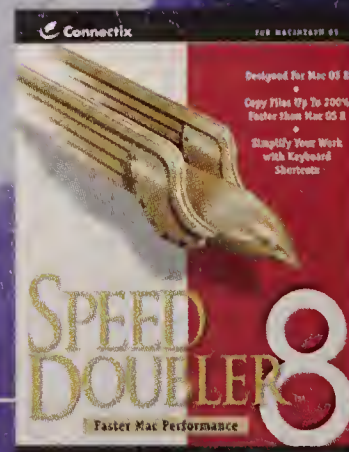
RAM Doubler 8 allows you to run OS 8 and the Microsoft Office™ 98 suite on a standard iMac—without the hassle of adding more memory.

RAM Doubler 8



Accelerate your iMac and increase your productivity! Speed Doubler 8 delivers faster file copying and keyboard shortcuts to minimize repetitive tasks.

Speed Doubler 8



New Surf Express Deluxe lets you surf and search the web faster. It's the only internet accelerator that works with all the leading browsers that are pre-installed on your iMac.

Surf Express Deluxe



Reviews

PowerBook G3/300

DVD ADDS NEW DIMENSION
TO HIGH-END PORTABLE

APPLE MIGHT HAVE STUMBLED onto the next killer feature for mobile computing: the portable cinema. The company's new flagship portable, the PowerBook G3/300, offers several nice improvements over previous Mac laptops. But the most exciting new feature is hardware and software that lets you play off-the-shelf DVD movie titles. For a hardened road warrior, nothing could be sweeter than popping a favorite movie in your PowerBook the next time you have to suffer a cross-country flight in coach class.

Marquee Performance

The PowerBook G3/300, which represents the high end of the portable line, is the only Apple notebook bundled with a DVD-ROM drive and an MPEG PC Card, both of which are needed to run DVD movies. If you have a different PowerBook G3 model, you'll need to buy a DVD kit for movie playback, and none were available as we went to press, even though one is on Apple's price list for \$499. Due to supply constraints, Apple suspended the build-to-order option for PowerBooks at least until October, but the company says it does not plan to offer the DVD kit separately at that time. Once the kit ultimately does become available, it will work with all PowerBook G3 models introduced since last May—as long as they have an active-



SUZANNE ROADY

matrix display. (Passive-matrix screens can't properly support DVD due to their lower refresh rates.)

Luckily, this PowerBook configuration is an exceptionally good value: a 300MHz PowerPC G3 with a 1MB backside cache; an 8GB hard drive; 64MB of RAM; 4MB of SDRAM for video; and, of course, the DVD-ROM drive and MPEG PC Card—all for \$4,999. Compare this with the same configuration of the 292MHz G3 portable that this machine replaces, which cost \$600 more and didn't include the DVD kit.

You also get a supersharp, 14.1-inch, color, active-matrix screen, which will now be standard equipment on all new PowerBook models except for one under-\$2,000 "value" configuration with a 12-inch passive-matrix screen. (Apple has also boosted performance on the low end of the line by adding a much needed 512K backside cache to the 233MHz PowerBook G3.)

As for the DVD capability, you have to see it to believe how great a movie can look played back full screen on the PowerBook's active-matrix display. Video

REAL PRODUCTS
REAL RATINGS

Reviews you can trust: Macworld rates only final shipping products, not prototypes. What we review is what you can actually buy.

OUTSTANDING: ★★★★★

VERY GOOD: ★★★★

GOOD: ★★★

FLAWED: ★★

UNACCEPTABLE: ★

purists may find fault in the modest pixel interpolation required to take native DVD resolution up to the PowerBook's full 1,024-by-768-pixel display, but you always have the option of shrinking the image down to 720 by 480 pixels.

Of course, playing a movie won't do you much good if the battery runs out during the cliffhanger, which might happen if you don't manage your power wisely. In tests where virtual memory was on and the hard disk stayed spinning, battery life fell short of 1½ hours. But with virtual memory off, we could eke out two hours, enough for most full-length movies. However, we noticed occasional video stuttering as the hard drive accessed vital routines.

One solution to the power drain would be to put the laptop to sleep and pop in a fresh battery, but this doesn't work because the Apple DVD Player quits if you invoke the sleep option. Luckily, the DVD software lets you jump directly to a scene, so you can get pretty close to where you left off, should you need to switch batteries. However, this works only if the DVD title supports scene selection.

Despite the inability to put a movie to sleep, Apple's DVD software is easy to use and supports all major DVD features, including subtitles and second audio-program tracks.

Speeds and Feeds

The PowerBook G3/300 also supports resolution switching, another standard feature on new Apple laptops. Instead of being locked into the single 1,024-by-768-pixel resolution of the previous G3 PowerBook models, the new portables can reset the built-in display to 800-by-



No Rest Apple's DVD Player software supports all major DVD features, but you can't put your movies to sleep.

600 or even 640-by-480 resolution. However, the PowerBook's antialiasing (pixel smoothing) is fairly primitive and leaves images at these lower resolutions looking somewhat out of focus. Whatever you do, don't combine lower resolutions with DVD video—the results aren't pretty.

We saved CPU performance for last because it is the least-interesting improvement on this model. While Apple kicked up the processor speed from 292MHz to 300MHz, it reduced the bus speed from 83MHz to 66MHz. The result is largely a performance wash (see "Faster by a Nose").

A couple of other nice performance tweaks: as on the iMac, Apple has added support for the V.90 protocol to the modem built into all new PowerBooks. In our tests, the modem could more consistently make faster connections than could older modems following the

K56flex protocol. (Apple plans to offer a software patch for download from its Web site so you can upgrade older modems to V.90.) Apple has also added ATI's latest low-power 3-D-acceleration chip set, Rage LT Pro. This, combined with the built-in 4MB of video RAM, makes for pretty snappy portable game play.

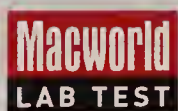
Macworld's Buying Advice

Being a mobile-computing aficionado and a movie buff who's already invested heavily in the DVD format, this reviewer greeted the arrival of the new DVD-equipped PowerBook with a mixture of joy and chagrin.

Joy, because no product could be better suited to his travel needs than a DVD theater that fits in a briefcase. Chagrin, because like any good PowerBook fanatic, he had already bought a high-end PowerBook without DVD.

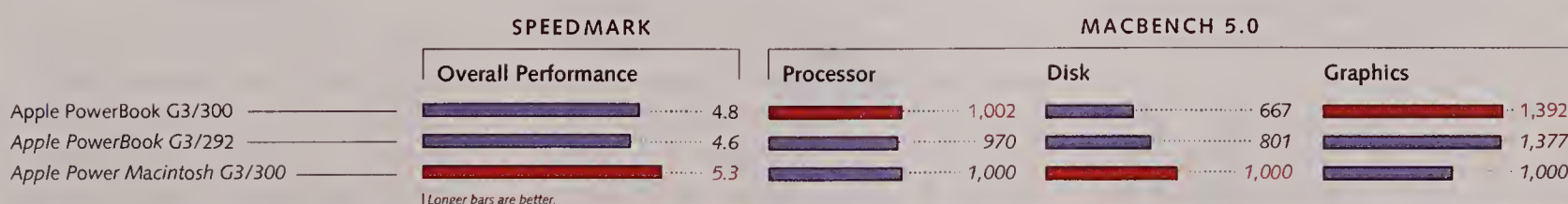
However, sore feelings aside, the new PowerBook is a good step forward for a product that was already at the top of its class in price and performance. For some high-end users, the DVD alone will justify buying a new PowerBook G3/300 and passing your DVD-less notebook down the company food chain.—ANDREW GORE

RATING: ★★★★★ **PROS:** Built-in DVD; many minor improvements; a good value compared with the model it replaces. **CONS:** Can't put DVD movies to sleep; lower resolutions cause slight blurring. **COMPANY:** Apple Computer (408/996-1010, www.apple.com). **LIST PRICE:** \$4,999.



Faster by a Nose

Best results in red. Reference systems in italics. SpeedMark scores are relative to that of a Power Mac 7100/80, which is assigned a score of 1.0. MacBench 5.0 scores are relative to those of a Power Mac G3/300, which is assigned a score of 1,000 in each test.



Behind Our Tests

For SpeedMark testing, the desktop system was set to 832-by-624-pixel resolution, giving that system an advantage over the PowerBooks, which were set to 1,024-by-768-pixel resolution. For MacBench testing, the

desktop system was set to 1,152-by-870-pixel resolution. For detailed information on our tests, see www.macworld.com/tests/.—Macworld Lab testing supervised by Kristina DeNike

Replacement Keyboards

KENSINGTON, DATADESK OFFER INPUT ALTERNATIVES

DESPITE ALL THE PUBLICITY surrounding the potential health risks of computing, most people don't give more than a passing thought to choosing a new or replacement keyboard for their Macintosh. That's a shame, because keyboards are probably responsible for the lion's share of computer-related injuries (see "Occupational Hazards," November 1998).

Although they're not meant to directly compete with each other, two new keyboards from Mac-peripheral veterans Datadesk Technologies and

feet at the back of the keyboard let you tilt it upward slightly; unfortunately, this position only accentuates the bend in your wrists, adding to the strain. (To be fair, these drawbacks are shared by all conventional keyboards. And to Kensington's credit, the brief manual includes a helpful section on workspace ergonomics and proper typing technique.)

Split Layout

Datadesk's SmartBoard is designed to overcome the deficiencies of conventional designs like that of the Keyboard-in-a-Box, although there's no guarantee that ergonomic keyboards can prevent or lessen injury.

The most obvious difference is the setup of the keys: instead of being arranged in horizontal rows, they're split into two groups that are angled away from each other. This odd-looking layout, popularized by Microsoft's Natural Keyboard, helps you keep your hands and forearms in a straight line when you're typing, which minimizes the strain on your wrists. The two groups of keys

are also angled slightly upward at the center, which allows your arms to assume a more natural position.

Unlike those of most keyboards, the SmartBoard's fold-down feet—Datadesk calls them Wrist Levelers—are located at the front, so they tilt the keyboard backward slightly when they're deployed. Negative tilt minimizes bending at the wrist, which may help prevent some computer-related injuries.

Unique Keypad

The SmartBoard sports another unusual feature that is claimed to provide additional ergonomic benefits. Instead of being uniform, like the key caps on most other keyboards, the SmartBoard's keys vary in size, with the largest keys located farthest from the center. According to Datadesk, this makes it easier to type on the SmartBoard than on conventional or other split keyboards. Although I wasn't able to verify this specific claim, the

SmartBoard was easier on my hands and wrists than other keyboards I've used.

Alas, the SmartBoard also differs from standard keyboards in a few annoying respects. For example, there are only 12 function keys, so you'll need to find a workaround if any of your applications require F13 through F15. The power key is located at the bottom left of the keyboard: it's easy to hit it accidentally, bringing up the Mac OS shutdown dialog box.

It also took me a while to find the +/- key at the top right of the keyboard, instead of in its customary place next to the delete key. (According to Datadesk, the SmartBoard's unusual key placements were necessary to keep the keyboard's footprint small enough for the keyboard to fit on standard keyboard trays. The SmartBoard is actually an inch narrower than the Keyboard-in-a-Box.)

Like most other unorthodox keyboards, the SmartBoard has a definite learning curve—it took me more than a week to work back up to my usual typing speed. If you use a SmartBoard at home and a standard keyboard at the office—or the other way around—you may find it hard to switch back and forth every day.

Macworld's Buying Advice

At a street price of close to \$50, Kensington's Keyboard-in-a-Box is a good choice if you're in the market for an inexpensive full-size keyboard. But if you're dissatisfied with your conventional keyboard for any reason, the SmartBoard—its few quirks notwithstanding—is well worth considering.—FRANKLIN TESSLER



Keyboard-in-a-Box (left) and the SmartBoard

Kensington Technology Group illustrate the range of choices available.

Generic Input

True to its name, Kensington's Keyboard-in-a-Box offers a no-frills option for people on a budget who need a full-size keyboard. The keyboard sports a row of 15 function keys across the top, a numeric keypad at the far right, and a standard complement of cursor-control and page-navigation keys in between. The supplied six-foot cable connects the Mac to an ADB jack on either side of the keyboard. Like Kensington's other input devices, the solidly built Keyboard-in-a-Box carries a five-year warranty.

The Keyboard-in-a-Box's nearly silent keys feel a trifle spongy when pressed. As with other conventional keyboards, the Keyboard-in-a-Box's keys are laid out in neat rows that tend to make your palms angle upward as you type, which puts stress on your wrists. Plastic

Keyboard-in-a-Box

RATING: ★★★½ **PROS:** Inexpensive; five-year warranty. **CONS:** Spongy key response; traditional design accentuates wrist strain. **COMPANY:** Kensington Technology Group (650/572-2700, www.kensington.com). **LIST PRICE:** \$90.

SmartBoard

RATING: ★★★ **PROS:** Ergonomic design may prevent repetitive strain. **CONS:** Unconventional location of +/- and power keys; does not have complete set of function keys. **COMPANY:** Datadesk Technologies (206/842-5480, www.datadesk1.com). **COMPANY'S ESTIMATED PRICE:** \$100.

Get a new Mac for \$99.





Introducing our most powerful Macintosh yet.

(Shown actual size.)

You only get one brain per lifetime. Unless, of course, you're a Macintosh® computer. In which case, you can now trade up in a very big way.

The new Mac® OS 8.5 is here. For only \$99*, it's an affordable way to give your PowerPC™-based Mac a higher level of intelligence.

Just how advanced is Mac OS 8.5? For starters, it's the world's most Internet-savvy OS. With the power to hunt down information around the world using multiple Internet search engines simultaneously.

It's now up to five times faster than its predecessor. With the ability to zap huge files across a network faster than Windows NT.**

It's just plain smarter. With a host of intelligent features to streamline and automate the things you do every day.

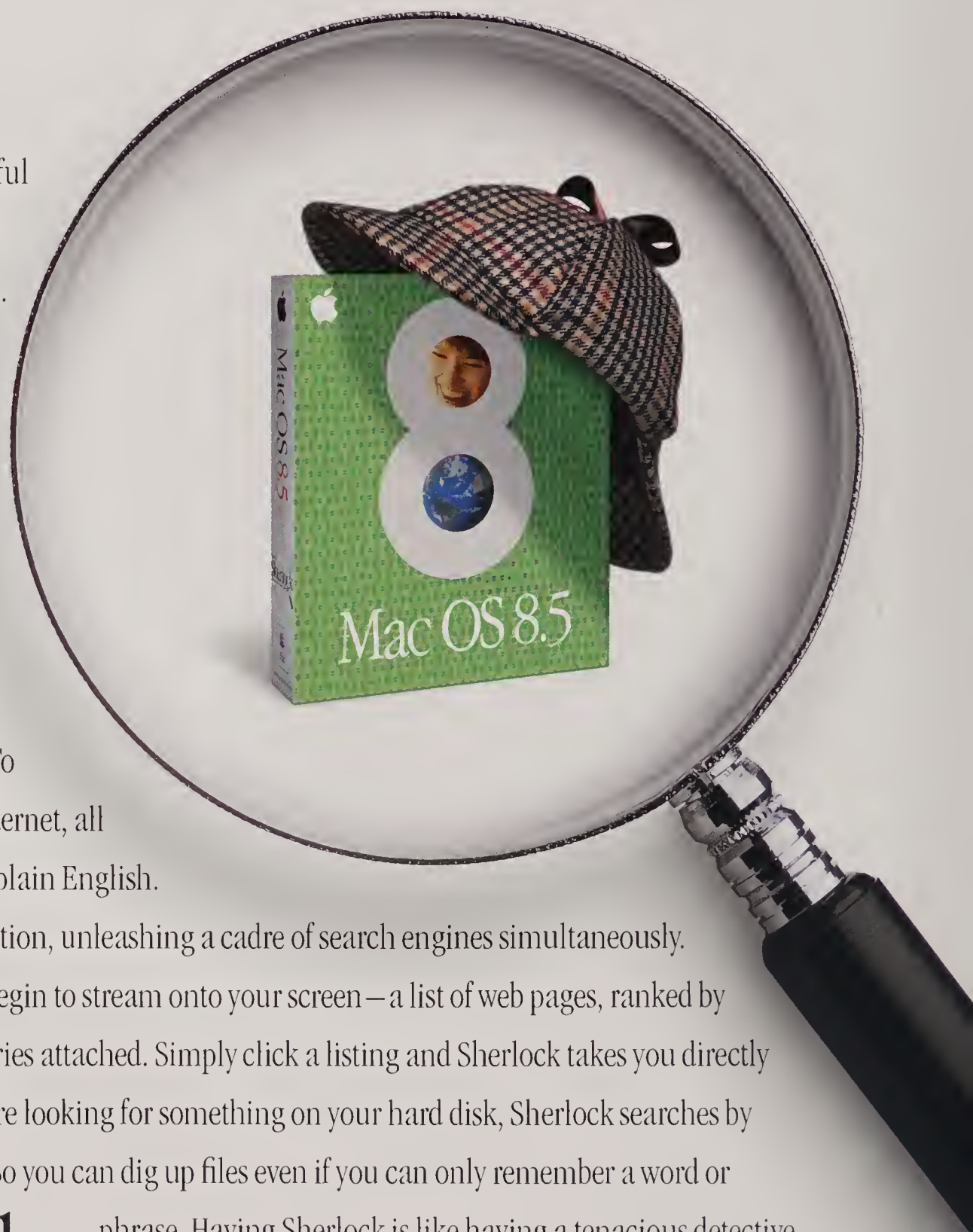
Best of all, it's easy. Double-click the install icon, and in less than 15 minutes†, you've got a whole new Macintosh.

Mac OS 8.5: Starring Sherlock

Remember the ever-useful “Find” feature? Now it’s infinitely more powerful. In Mac OS 8.5, we call it Sherlock™—because, at your request, it relentlessly digs up information wherever it’s hiding. On the Internet or deep inside your hard disk. To find anything on the Internet, all you have to do is ask in plain English.

Sherlock springs into action, unleashing a cadre of search engines simultaneously. In seconds, the results begin to stream onto your screen—a list of web pages, ranked by relevance, with summaries attached. Simply click a listing and Sherlock takes you directly to that web page. If you’re looking for something on your hard disk, Sherlock searches by content as well as title. So you can dig up files even if you can only remember a word or phrase. Having Sherlock is like having a tenacious detective on call 24 hours a day. Without the extravagant retainer.

Sherlock



your personal search detective.

1.

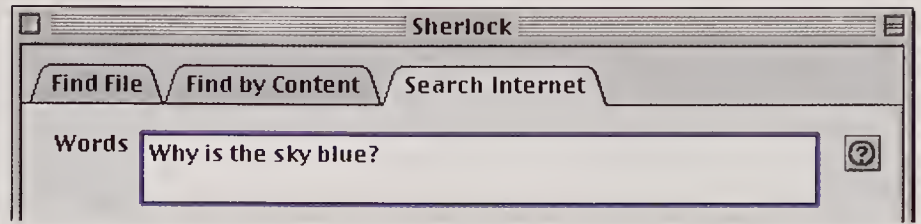
Enter your request.

Looking for specific information?

Need some answers fast? Sherlock

is smart enough to understand the

most advanced search language on earth: English. There's no need to bother with symbols or quotation marks. Simply enter a key word or phrase—Sherlock takes your cue and instantly springs into hot pursuit.



2.

Sherlock searches for clues.

At Sherlock's command are some of the world's most powerful Internet search engines, all working simultaneously.

You don't even have to open your web browser—just a single click sends Sherlock into action. And in about the time it took you to read the last sentence, the results start pouring onto your desktop.



3.

Sherlock reports back.

Sherlock is meticulous.

As your search results begin to come in, they're organized in a tidy list—

dynamically sorted by

relevance. And every

item is just a double-

click away. If the item is

on a list of web pages,

for example, Sherlock

will open your browser

and take you there

posthaste. If the item is

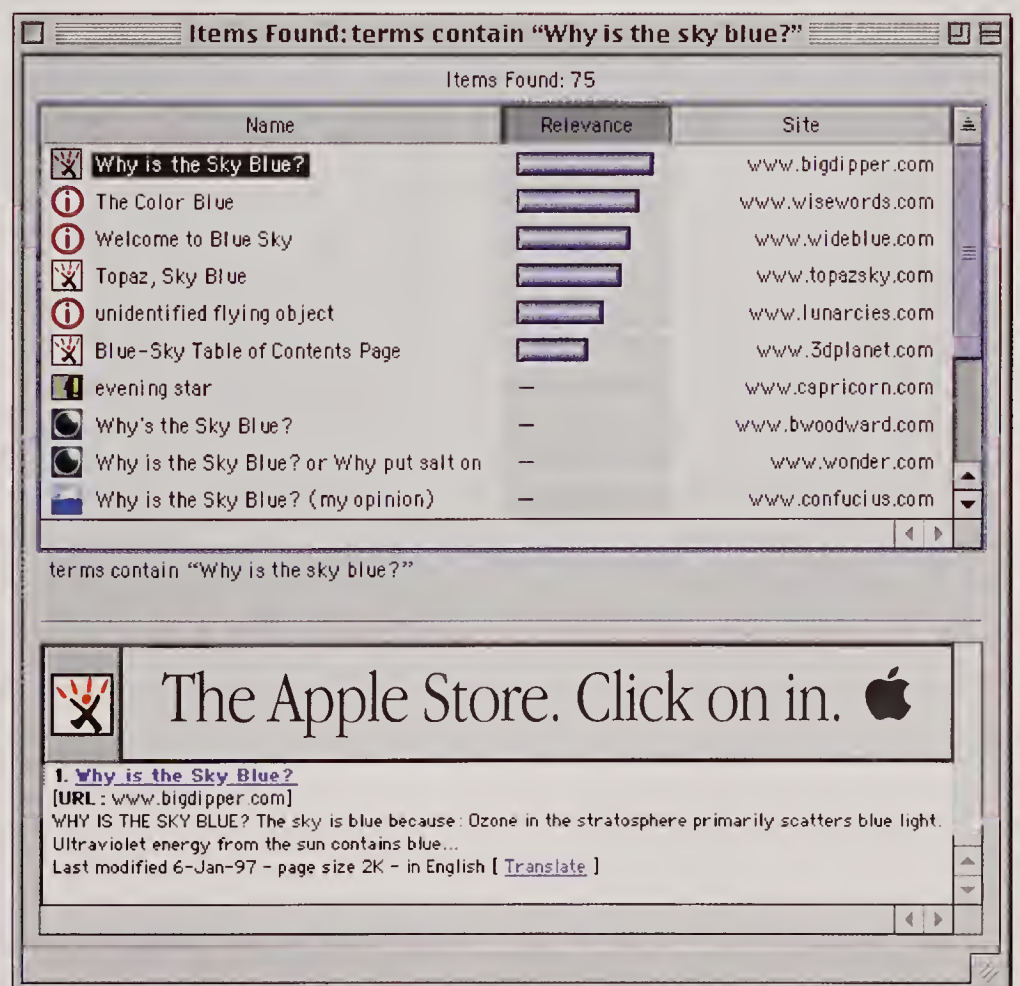
on a list of documents in

your computer, Sherlock

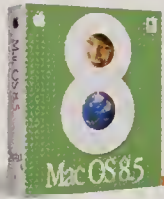
will, at your request,

either summarize it or

open it. Case closed.



Inside every PowerPC Mac, there's



Cut down on the foot-tapping and finger-drumming while you wait for your gargantuan files to copy across the network. With Mac OS 8.5, network

*copying is twice as fast as Mac OS 8.1 and about 20% faster than Windows NT.**

AppleScript™ is now fully native and optimized for the PowerPC processor—running scripts up to five times faster than before. You can script all kinds of new things, including printing, Sberlock, ColorSync® and network configuration. You can even attach a script to a folder, so dropping a document onto a folder automatically does your work for you.



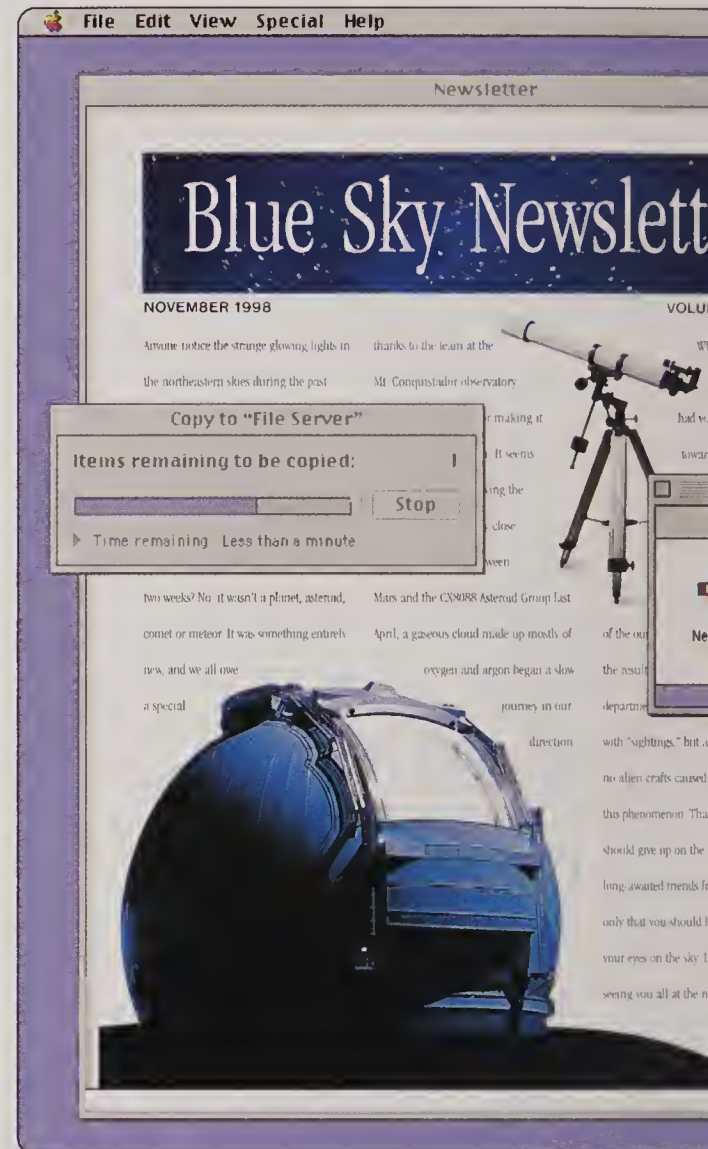
AppleScript

A Mac OS 8.5 supports anti-aliasing for TrueType® fonts, which smoothes the “jaggies” that sometimes appear along the edges of font characters. A textbook example of great-looking text.

Never set your clock again. Mac OS 8.5 will automatically synchronize your Macintosh over the Internet with the world's most accurate timepieces. Heck, it will even automatically adjust your Mac's clock for daylight saving time to keep you in sync with the world.



QuickTime™ Mac OS 8.5 comes complete with the gold standard of multimedia: QuickTime® 3. In fact, we've even included the upgrade to QuickTime 3 Pro (a \$29.95 value), so you can do cool things like save and edit the video images you download from the web.



Mac OS 8.5 puts a powerful new Mac inside the Macintosh you already own. So almost all of your applications will run better.

To get you started on the Internet quickly, Mac OS 8.5 comes complete with 30 days of free access via EarthLink (and an easy way to sign up). It also includes both Microsoft Internet Explorer and Netscape Navigator™ for browsing and Outlook Express for access to e-mail and newsgroups.



EarthLink™

a new Mac waiting to burst out.



You'll see improvements in the things you do every day, from scrolling and printing to searching, copying and e-mailing.



www.apple.com If you think turning documents and applications into "aliases" was a great time saver, wait until you try it with URLs, web links and e-mail addresses. Drag any of these things to the desktop and you'll create an alias—ready to whisk you to a web site or open a pre-addressed e-mail message.

The answer to the age-old question, "Where am I?" Mac OS 8.5 makes it easy to tell which application is active, displaying both the icon and the application name in the menu bar. You can even tear off the Application Switcher and place it anywhere on the desktop for one-click access to all your running apps.



Introducing Smart Scrolling. Now, in any Finder™ window, just a glance at the scroll bar "thumb" tells you what portion of the window contents you're currently viewing. (Coming soon to your favorite applications as well.) Plus, you can position the scroll arrows next to each other, saving lots of extra mouse movements when you scroll up and down.

To keep colors from getting lost in translation from scanner (or digital camera) to screen to paper to web, ColorSync is the undisputed standard. Mac OS 8.5 has the latest version, so you'll be showing your true colors every step of the way.



Now you can rush things into print. Just drag and drop any graphics file—JPEG, EPS, PICT or PostScript™—onto a desktop printer icon and let the printing begin. No application launching. No wasted time.



Perform a brain transplant on your Mac in less than 15 minutes.** Installing Mac OS 8.5 is as easy as clicking the install icon. You can create scripts to perform identical installations on many machines, or use Apple® Network Assistant to install Mac OS 8.5 on remote Macs from the comfort of your desk.



Small investment, big return.

Upgrading a single Mac application is a great way to make one application run better. Upgrading to Mac OS 8.5 is a great way to make almost all your applications run better.

So, at \$99*, Mac OS 8.5 is not only one of the most affordable upgrades you can make, it's by far the best. Whether you're a casual Mac user or a seasoned Mac pro.

Pick up a copy of Mac OS 8.5 for your PowerPC-based Macintosh at your authorized Apple reseller (call 1-800-538-9696 for the location nearest you). Or visit the Apple Store™ at www.apple.com.

It's the fastest, easiest way to get a whole new Macintosh.



Think different.™

*Estimated retail price. Tax not included. Requires Mac OS-based Apple computer with PowerPC processor and 16MB of physical RAM, with virtual memory set to at least 24MB. Apple PC Compatibility Cards not supported. Internet access requires ISP. © 1998 Apple Computer, Inc. All rights reserved. Apple, the Apple logo, AppleScript, ColorSync, the ColorSync logo, Mac, Macintosh, the Mac OS logo, QuickTime and TrueType are trademarks of Apple Computer, Inc., registered in the U.S. and other countries. The Apple Store, Finder, iMac, the QuickTime logo, Sherlock and "Think different" are trademarks of Apple Computer, Inc. Adobe and PostScript are trademarks of Adobe Systems, Inc. Netscape Navigator is a trademark of Netscape Communications Corp. PowerPC is a trademark of IBM Corp. used under license therefrom. L03369A

3-D Authoring Tools

INFINI-D 4.5 AND STRATA STUDIO PRO 2.5 DUKE IT OUT

TWO VENERABLE MAC 3-D SOFTWARE packages—MetaCreations' Infini-D and Strata Studio Pro—have for years been dominating the middle segment of the integrated (modeling, rendering, and animation) 3-D market. Their latest upgrades add refinements: Infini-D 4.5 adds more capability to the radically revised interface introduced with version 4.0, and Strata Studio Pro 2.5 adds more depth to the program's existing (and noticeably aging) interface. And although Studio Pro has the edge in final rendering quality, Infini-D now offers a serious price advantage.

Respectable Progress

These upgrades (\$99 to move up from Studio Pro 2.X or Infini-D 4.X) don't threaten to steal any thunder from higher-end offerings such as ElectricImage. But both offer refinements to Infini-D's and Studio Pro's healthy variety of tools, which are fine for production-quality work.

Infini-D's straightforward particle-animation system has been augmented in version 4.5 with real-time previews of selected parameters. You can now designate particles to change color when colliding with objects in a scene and have particles burst into more particles, or "spawn," upon impact. And you can constrain particle systems with deformation fields, to create, for example, particles that appear to be blown by the wind of a fan.

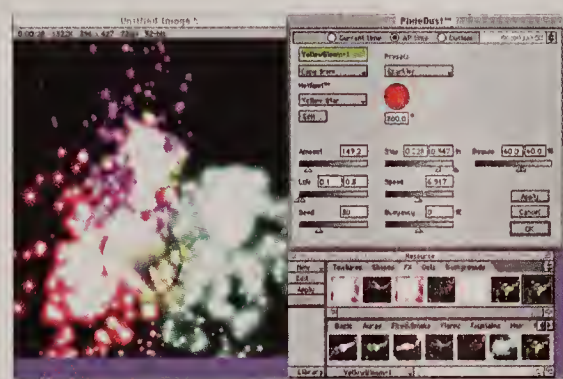
Studio Pro's decent particle-animation system has been enhanced with an implementation of Metaballs, which makes particles appear to melt together—great for simulating fluids such as molten metal. And its new collision-detection feature—which is old news in Infini-D—makes particles appear to ricochet off surfaces.

Studio Pro also now has a deformation lattice, a "distortion field" through which you can pass objects, even when grouped; these are great for creating animations of shapes bending and deforming. Infini-D lacks deformation lattices for grouped objects, but it allows you to apply deformations to single objects, using up to eight of its deformation commands on a single object.

Both programs offer improved

vertex-editing control over mesh objects. Infini-D's tools for editing meshes are slightly superior, as evidenced in its new "magnetic" cursor, which allows you to adjust mesh warping while you edit vertex points.

But when it comes to the critical process of animation, Studio Pro has several advantages over Infini-D, especially for more-demanding tasks such as character animation. Studio Pro's already



Dazzling Dust Strata Studio Pro 2.5 comes with a variety of new special effects, including customizable "pixie dust." This specialized particle system can be attached to any object, allowing it to leave a trail of glowing embers as it moves around the screen.

decent implementation of Inverse Kinematics (IK) has been enhanced with mesh linkage and includes a full complement of tools for creating Bones—linked objects that move together logically.

Surprisingly, Infini-D 4.5 offers absolutely no IK tools of any sort—a major oversight for many types of complex animation tasks, not just character animation.

Rendering Refinements

Rendering is perhaps the most sensitive part of the 3-D creation process, and Studio Pro has some specific advantages over Infini-D, especially in the crucial area of ray tracing. Both programs now offer MIP mapping for textures, which results in noticeably more realistic and smoother image-texture maps. But Infini-D doesn't support MIP modes for ray-traced scenes, reducing the overall quality of images ray-traced with complex texture maps; Studio Pro's MIP mapping works just fine with ray tracing.

On the other hand, Infini-D offers production-oriented users render-

management features plus the option of buying a network-based rendering-software package called BackBurner. Studio Pro has no such capabilities.

A major omission from Infini-D's upgrade is a motion-blur rendering option for animated objects. Granted, Infini-D allows you to apply many Adobe Photoshop and Adobe After Effects filters to specific objects in a scene—a great capability lacking in Studio Pro. This partially makes up for Infini-D's motion-blur deficit and opens the door to many compelling special effects. Regardless, not having motion blur as a built-in rendering option is a major obstacle for creating realistic-looking motion.

Studio Pro's answer to Infini-D's acceptance of Photoshop and After Effects filters is a set of Power Modules, special effects that include fire, smoke, hair, and pixie dust—none of which can be easily created in Infini-D.

Macworld's Buying Advice

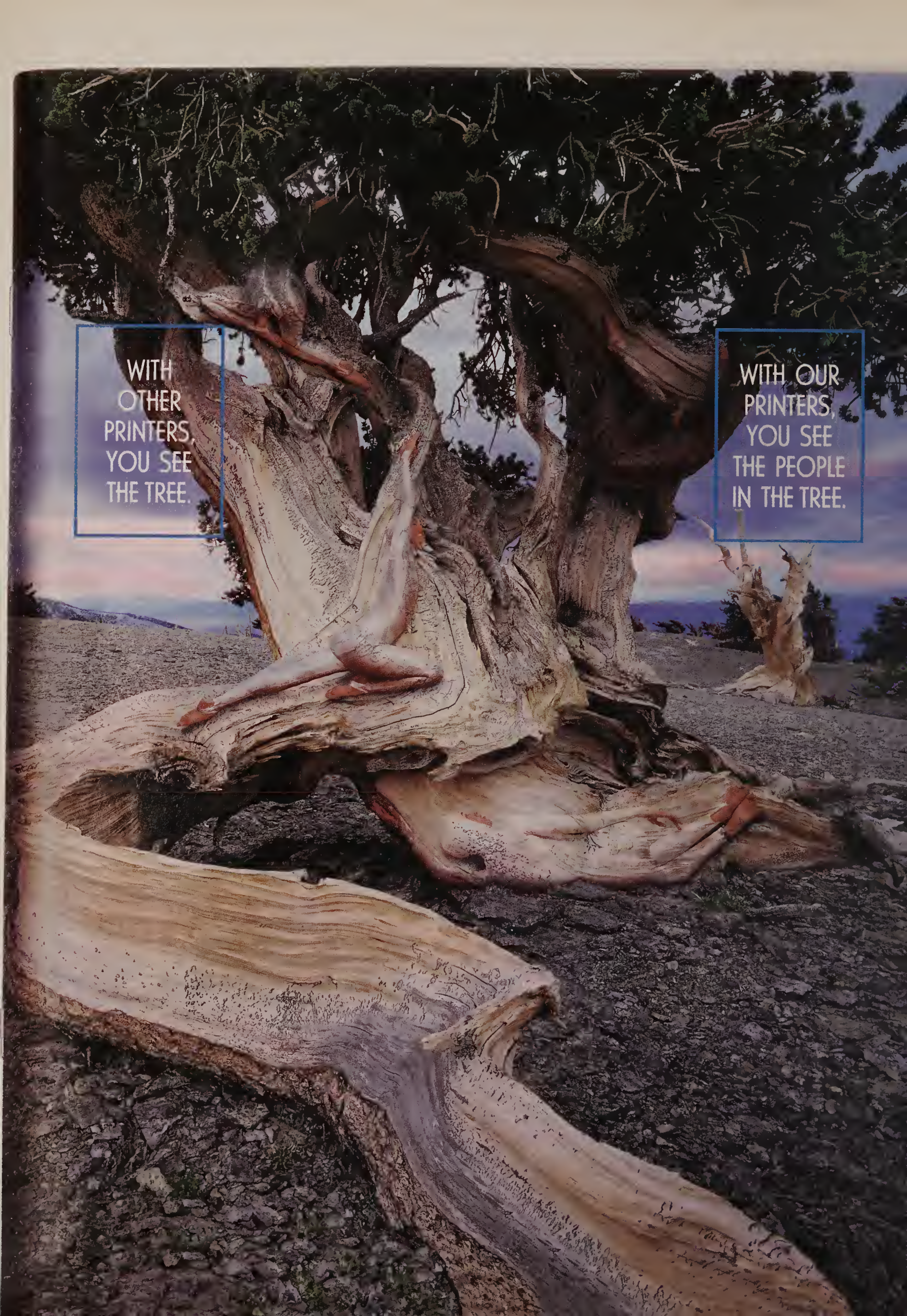
Artists already using either 3-D package will find its respective upgrade worthwhile for the enhanced effects. Graphic designers wishing to enter the 3-D realm will find Infini-D to be a more user-friendly and significantly more affordable tool for creating 3-D logo designs and general 3-D animation. Modeling-minded artists will be happier with Strata Studio Pro's more industrial-strength modeling and rendering controls, although the program is not necessarily worth almost three times the cost of Infini-D.—DAVID BIEDNY

Infini-D 4.5

RATING: **PROS:** Straightforward interface; good particle systems and special effects; network rendering option. **CONS:** Lacks motion blur; no MIP mapping for ray-traced rendering; no Inverse Kinematics; weaker modeling tools. **COMPANY:** MetaCreations (805/566-6200, www.metacreations.com). **LIST PRICE:** \$599.

Strata Studio Pro 2.5

RATING: **PROS:** Good-quality rendering controls; Inverse Kinematics; extensive variety of special effects. **CONS:** No network rendering option; interface could use an update; higher price. **COMPANY:** Strata (435/628-9756, www.strata3d.com). **LIST PRICE:** \$1,495.

A large, gnarled tree trunk, likely a juniper, dominates the foreground. The wood is heavily weathered, showing a mix of light tan and dark brown tones with prominent grain patterns. A large, irregular hollow has formed in the center of the trunk. The background features a soft sunset sky with hues of orange, pink, and blue, and a rocky, uneven ground.

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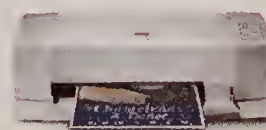
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Server-Restarting Devices

MACCOACH 2.0 TROUNCES POWERKEY REBOUND IN FEATURES AND PERFORMANCE

CHANCES ARE, IF YOU'RE RUNNING a Mac as a server, then you're also carefully watching to make sure the system doesn't crash. Two teeny-tiny hardware appliances, Sophisticated Circuits' PowerKey Rebound and MacCoach 2.0, from the Dutch company Neuron Systems, will guard your server by detecting a crashed Mac and restarting it.

Both products use the same technique: a small electronic "watchdog" timer is connected to your Mac's ADB port, and the device automatically performs a keyboard restart if your Mac stops. The gadgets easily plug into your keyboard or mouse port, where they generate your Mac's reboot. The supplied extensions run in the background and probe the appliance at regular intervals. In addition to performing the automated restart function, the products also let you set parameters—such as the frequency of reboots, the amount of time permitted for a reboot, and the number of consecutive reboots—to help prevent restart repetitions.

Both products perform well, but MacCoach 2.0 adds a few thoughtful features. For instance, if an application—rather than



Sophisticated Circuits' PowerKey Rebound (top) and Neuron Systems' MacCoach

your whole machine—crashes, MacCoach 2.0 detects this by catching events from the Mac OS. MacCoach 2.0 then gives you the option of initiating a Finder restart to gracefully quit other applications before rebooting the Mac, which helps avoid data corruption in nonfailing applications. Rebound, on the other hand, can detect application crashes only when the applications are specifically written as Rebound-aware. And it doesn't offer the graceful Finder-restart option. MacCoach 2.0 also

logs crashes—invaluable for diagnosing chronic problems—and publishes the log to a Web site for remote viewing.

Macworld's Buying Advice MacCoach 2.0 and PowerKey Rebound look as if they could be siblings. Physically, these appliances are very similar, and they are even priced the same. But MacCoach 2.0's extra features—graceful restart, logging, and Web output—make MacCoach a clear winner over Rebound.—MEL BECKMAN

MacCoach 2.0

RATING: ★★★★★ **PROS:** Detects crashed applications; Finder-restart option; event log; Web output. **CONS:** No provision for disk formatting. **COMPANY:** Neuron Systems (31-570-519100, www.neuronsys.com). **LIST PRICE:** \$99.

PowerKey Rebound

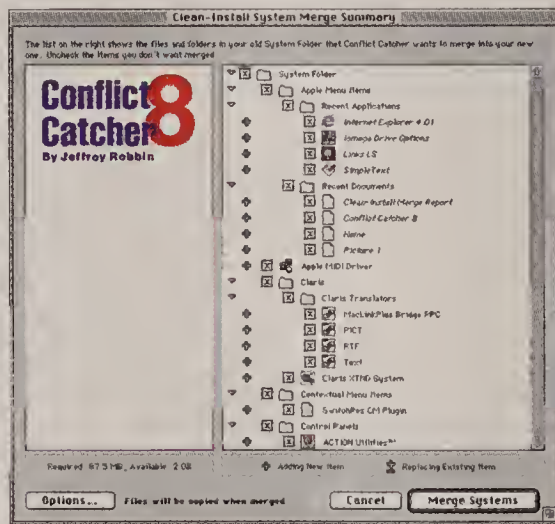
RATING: ★★★★★ **PROS:** Provides for Rebound-aware application-crash detection. **CONS:** No generic application-crash detection; no event log; no provision for disk formatting. **COMPANY:** Sophisticated Circuits (425/485-7979, www.sophisticated.com). **LIST PRICE:** \$99.

Conflict Catcher 8

MANAGE EXTENSIONS AND MORE

HOW SURPRISING, THE NUMBER of things in life that seem absolutely perfect until something better comes along. Your Power Macintosh 9600, for example, seemed unsurpassably speedy until you fired up a Power Mac G3. And the oranges you loved as a kid now seem bland compared to the marvelous Minneola. Now let's add Apple's Extensions Manager to this list. Casady & Greene's Conflict Catcher 8 is not only more capable than Apple's Extensions Manager but it's also a big improvement over previous versions of Conflict Catcher.

In early iterations, Conflict Catcher did Apple's Extensions Manager one better by allowing you to enable and disable start-up items such as extensions and control panels. In addition, Conflict Catcher automated the process of troubleshooting conflicting start-up items. Later versions of the program added the option of controlling application plug-ins. Conflict Catcher also allowed you to create sets of extensions and control panels you could switch off with a single click, rather than having to disable each one individually.



Merge Right Conflict Catcher 8's Clean Install System Merge feature eases system-software upgrades.

So what could this erstwhile extension manager possibly do for an encore? For starters, version 8 provides the Clean Install System Merge function, which creates a list of items that appear in one System Folder and allows you to choose which items you'd like to move or copy to another System Folder.

That's right, no more rummaging around in your Previous System Folder and manually moving extensions, control panels, contextual-menu items, fonts, and preference files into a new System Folder when you install system software. Just select the

files and folders you wish to move or copy, and click on the Merge Systems button. If you like, you can label items that were originally in the new System Folder as well as apply a different label to files you've moved to this folder.

Conflict Catcher is now Location Manager-savvy, allowing you to switch sets of start-up items with each new location. Version 8 even supports contextual menus: with a control-click, you can trash, show the original of, or change the label of any item in Conflict Catcher's list. You can also switch System Folders on the fly. This is very useful if you have more than one System Folder—OS 8.1 and OS 8.5, for example—on the same disk and want to easily switch between them by having Conflict Catcher 8 "bless" one System Folder or the other.

Macworld's Buying Advice I can't think of a Mac user who wouldn't benefit from Conflict Catcher. If you don't have a copy, buy one. If you have an older version, upgrade.—CHRISTOPHER BREEN

RATING: ★★★★★ **PROS:** A great troubleshooting tool; Clean Install System Merge function is a godsend. **CONS:** None. **COMPANY:** Casady & Greene (831/484-9228, www.casadyg.com). **LIST PRICE:** \$79.95.

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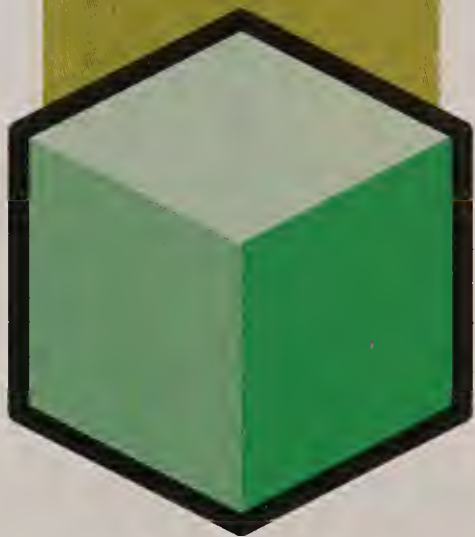
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QX-Tools 4.0

VERSATILE TOOL SET HAS SOMETHING FOR EVERYBODY

QX-TOOLS 4.0 FROM EXTENSIS is a set of seven QuarkXTensions for QuarkXPress 4.03 and higher. Some add new capabilities to QuarkXPress, and others make it easier to use the features already present. You may not like everything, but you'll probably find a few that suit your taste. And you may discover one or two that you can't live without.

QX-VectorEdit lets you open PostScript, EPS, and PDF files created in Adobe Illustrator, Macromedia Free-

predecessor of QX-Tools 4, included.

QX-ItemStyles extends the style-sheets metaphor to items. Using it, you never have to create the same item twice. You can base the styles on existing items or create them from scratch.

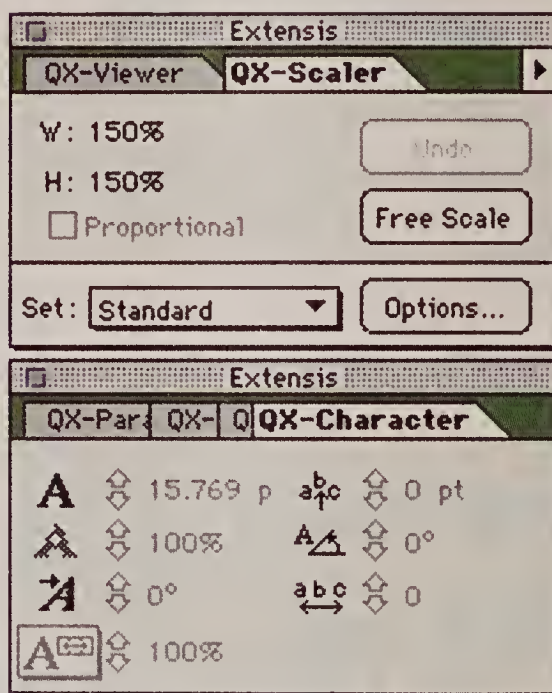
Although QuarkXPress 4 lets you scale grouped items, it doesn't let you specify how individual text and graphic objects within the group are scaled. QX-Scaler lets you control nearly 50 different attributes, including font size, line and frame thickness, and box size. You can resize individual items or groups proportionally or disproportionately by entering horizontal and vertical scaling values, and you can undo scaling operations performed with QX-Scaler, something you can't do with Quark's own resizing function.

Putting on a Different Face

QX-Viewer and QX-FineTune offer handy interface alternatives for several common tasks. QX-Viewer is a palette that provides easy access to all of QuarkXPress's page-display and document-navigation features. QX-FineTune adds four palettes that let you interactively modify many common character, paragraph, item, and anchored-rule attributes.

Macworld's Buying Advice

No matter how you use QuarkXPress or what kinds of publications you produce, you'll find something to like in QX-Tools 4. If there's a downside to the software, it's the absence of several handy features, such as QX-Bars and QX-DocStyles, found in QX-Tools 2. Although most QX-Tools 2 components are compatible with QuarkXPress 4, Extensis recommends against using QX-Tools 2 and QX-Tools 4 together. Even so, if you're looking for a way to beef up XPress, QX-Tools is a good place to start.—JOHN CRUISE



QX-Tool Box QX-Scaler (top) lets you control how items within a group are scaled. QX-FineTune (bottom) lets you quickly modify character, paragraph, and item attributes.

Hand, and other programs. When you open the file, QX-VectorEdit creates a new QuarkXPress document and converts each object into a QuarkXPress item. You can then modify or delete individual items, specify trapping, and so on.

QX-Layers lets you combine several items into a single layer that can be displayed or hidden; printed or not printed; locked or unlocked; or named, deleted, or moved up or down in the stacking order.

Just as the XPress Find/Change feature lets you replace text and text attributes, QX-FindChange lets you find and change item attributes, such as line and frame widths or box backgrounds. Unfortunately, you can't globally find and change colors or find and change colors applied to text—two features that QX-Tools 2, the

RATING: **PROS:** Diverse set of useful tools; easy-to-use palettes; components are well integrated with QuarkXPress and with each other.

CONS: Not compatible with previous versions of QuarkXPress; some useful features absent or dropped from previous version of QX-Tools.

COMPANY: Extensis (503/274-2020, www.extensis.com). **LIST PRICE:** \$149.95.

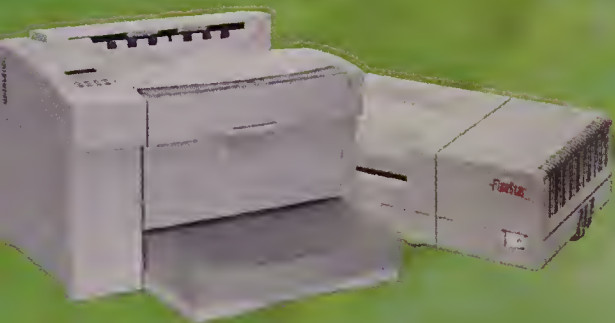
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1. Macworld
2. Pub. No. 07418647
3. Date of filing: October 1, 1998
4. Published monthly
5. No. of issues published annually: 12
6. Annual subscription price: \$34.97
7. Known office of publication: 301 Howard St., San Francisco, CA 94105
8. Complete mailing address of the headquarters of general business offices of the publisher: Mac Publishing L.L.C., 301 Howard St., San Francisco, CA 94105
9. The names and address of the publisher, editor, and managing editor are Publisher: Colin C. Crawford, 301 Howard St., San Francisco CA 94105; Editor: Andrew Gore, 301 Howard St., San Francisco, CA 94105; Managing Editor: Claire H. Breen, 301 Howard St., San Francisco, CA 94105
10. The owner is: Mac Publishing, L.L.C., 301 Howard St., San Francisco, CA 94105; ZD Inc., One Park Avenue, New York, NY 10016; Macworld Communications, Inc., 301 Howard St., San Francisco, CA 94105
- The names and addresses of stockholders owning or holding 1% or more of the total amount of stock are listed below. None
11. There are no known bondholders, mortgagees, or other security holders owning or holding 1% or more of the total amount of bonds, mortgages, or other securities.
13. Publication name: Macworld
14. Issue date for circulation data below: October 1998
15. Extent and nature of circulation: Average no. copies each issue during preceding 12 months: A. Total no. copies (net press run), 834,131; B. Paid and/or requested circulation 1. Sales through dealers and carriers, street vendors and counter sales, 79,9942. Mail subscription; (paid and/or requested), 558,758C. Total paid and/or requested circulation (sum of B1 and B2), 638,752 D. Free distribution by mail carrier or other means, samples, complimentary, and other free copies, 15,645; E. Free distribution Outside the Mail, 0; F. Total Free Distribution, 15,645. G. Total distribution (sum of C and F), 654,397 H. Copies not distributed: 1. Office use, left over, unaccounted for, spoiled after printing 13,568; 2. Return from news agents, 166,166; I. Total (sum of G, H1 and H2 -should equal net press run shown in A) 834,131. Percent paid and/or requested circulation, 97.61% Actual no. copies of single issue published nearest to filing date: A. Total no. copies (net press run), 688,000; B. Paid and/or requested circulation: 1. Sales through dealers and carriers, street vendors and counter sales, 73,100; 2. Mail subscription (paid and/or requested), 446,300; C. Total paid and/or requested circulation (sum of B1 and B2) 519,400; D. Free distribution by mail carrier or other means, samples, complimentary, and other free copies, 11,806; E. Free Distribution Outside the Mail, 0; F. Total Free Distribution, 11,806; G. Total distribution (sum of C and F), 531,206; H. Copies not distributed: 1. Office use, left over, unaccounted for,spoiled after printing, 294; 2. returns from News Agents, 156,500. I.Total (sum of G, H1 and H2 -should equal net press run shown in A) 688,000. Percent paid and/or requested circulation, 97.78%
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Bullet Drive Express

DRIVE WON'T WEIGH YOU DOWN

CHANCES ARE YOUR POWERBOOK can't accommodate the floppy, CD-ROM, and removable-media drives that you've got stashed in your computer bag—and that's without considering an additional hard drive. Road Warrior's Bullet Drive Express—an external drive for any PowerBook equipped with a CardBus slot—helps ease the PowerBook-peripheral squeeze.

Setting up the Bullet Drive Express is simple. Its sassy leatherlike pouch includes a cable that holds a Type II PC Card and an IDE connector that plugs into the back of the drive's platinum-



ARNOLD TIOSEO

colored enclosure. Although we looked at a recently discontinued 1.4GB hard drive, Road Warrior currently offers 2GB, 3GB, 4GB, 5GB, and 6GB disks with the Bullet Drive Express. You can purchase an empty enclosure and easily install your own hard drive.

The first Bullet Drive Express we received didn't work, due to a faulty PC Card, but the replacement drive worked once we turned off PC Exchange before


formatting the disk—a requirement not noted in the manual. Like drive-bay devices, the Bullet Drive Express can be removed and mounted while the PowerBook is running. To remove the drive, drag the drive's icon to the Trash, and the PC Card ejects. To mount it, just push the card into the CardBus slot.

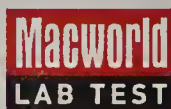
The Bullet Drive Express comes with an AC adapter, but when the drive's not plugged into an AC outlet, it pulls its power from the PowerBook.

The Bullet Drive Express is no speed demon. In fact, when we ran it through MacBench 5.0's Disk and Publishing Disk tests, we found it to be slower than the internal drive in a PowerBook G3/292. (See "Portable Drive's No Speedster" for test results.) For general use, the Bullet Drive Express hardly seems sluggish, but for heavy digital-video and -audio work, you may find the Bullet Drive Express wanting.

Macworld's Buying Advice

The Bullet Drive Express proves to be a useful companion for PowerBook users who need more than a little extra hard-disk space. Granted, it's slower than a typical internal hard drive, but it's small and easy to use and doesn't require a power adapter or a drive bay. For the most part, this warrior's ready for the road.—CHRISTOPHER BREEN

RATING:  **PROS:** Small and easy to use; pulls power from PowerBook. **CONS:** Less-than-stellar performance. **COMPANY:** Road Warrior (714/434-8600, www.warrior.com). **LIST PRICE:** Enclosure only, \$130; with 2GB to 6GB drive, \$500 to \$1,080.



Portable Drive's No Speedster

Best results in red. Reference system in italics. MacBench 5.0 scores are relative to those of a Power Macintosh G3/300, which is assigned a score of 1,000 in each test.

MACBENCH 5.0				
	Disk		Publishing Disk	
Road Warrior Bullet Drive Express		325		278
Apple PowerBook G3/292 (internal drive)		535		473
Longer bars are better				

Behind Our Tests

The PowerBook G3/292 ran Mac OS 8.1 and was equipped with 96MB of RAM, a 512K system disk cache, and a 4GB IDE internal hard drive. For detailed information on our testing methodology, see www.macworld.com/tests/.—Macworld Lab testing supervised by Kristina DeNike

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Wootech Voyager Professional Edition

WEB TOOL TAKES YOU FOR A BUMPY RIDE

CONSTRUCTING WEB SITES almost always requires multiple programs: HTML editors and graphics tools, plus software for creating animation, sound, or video. Wouldn't it be great if you could coordinate these tools and the files they create? That's the promise of Wootech Voyager Professional Edition, which uses

Unfortunately, Voyager's appeal is more theoretical than practical; the program is almost unusable for real work. The biggest problems involve initial site import. When Voyager imports a site, it makes copies of each site element and stores them in TheVault. If you have a large site, TheVault for that site will be correspondingly large. Once the database

reaches a certain size, Voyager begins to suffer memory failures, freezing or crashing. Even Wootech tech support—available only via e-mail—couldn't tell me the actual size that would prompt such failures. The program also hangs if you run out of disk space or try to import files with invalid Web names—even if they're valid Macintosh file names.


You could start a site in Voyager and then find at some point that it grows so large that the program fails, leaving you in the lurch. Voyager is also missing a built-in FTP feature

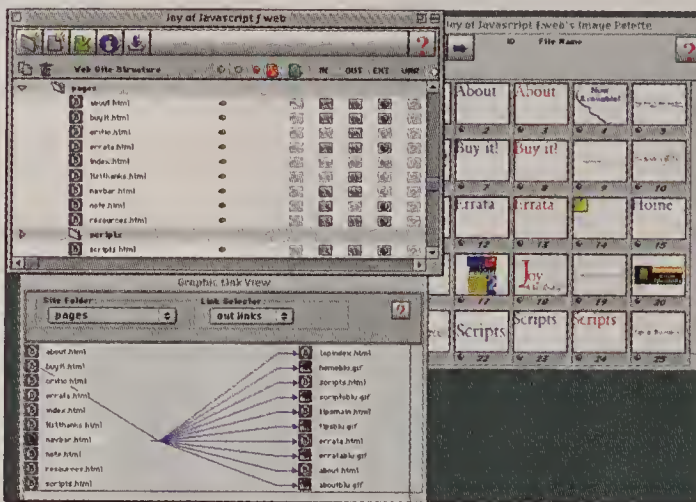
that would allow you to directly upload and download Web sites.

Macworld's Buying Advice

The idea behind Wootech Voyager is appealing, but the execution is not. Helping you bring order to the files that make up a Web site—while allowing you to use your favorite tools—is a laudable goal.

But Voyager's bugs and file-import difficulties make it unsuitable for use with large Web sites. And if you have a smaller site, the site-management functions built into GoLive CyberStudio Personal Edition or Adobe PageMill 3.0 will be perfectly adequate. Wootech says that version 3.0, due in early 1999, will fix the program's major problems. I suggest that you skip this version and wait for the next.—TOM NEGRINO

RATING:  **PROS:** Good site management; usefully consolidates site assets. **CONS:** Frequent crashes; poor error handling; wasteful of system resources; no built-in FTP tool; no telephone technical support. **COMPANY:** Wootech (650/286-1112, www.wootech.com). **LIST PRICE:** \$99.



Asset Management Wootech Voyager's Site windows let you check the links on your Web page, and the Image Palette provides easy access to graphics.

a database to organize the elements of your Web site. Unfortunately, the program's poor performance leaves the promise unfulfilled.

In the Vault

Voyager imports HTML pages, graphics, and media files into a central object database called TheVault. You can then access elements of a particular type from a single palette. The Image Palette shows thumbnails of all the graphics in your site; double-clicking on a thumbnail launches the application that created the graphic. Similarly, the Site Structure window shows thumbnails of each HTML page; double-clicking here brings up the page in your preferred HTML editor. Voyager tracks changes you've made to the HTML code and handles site-management tasks such as checking hyperlink validity.

Voyager works with most Web-page editors except NetObjects Fusion, which uses its own proprietary database to store HTML elements. I used Voyager with GoLive CyberStudio, BBEdit, and Claris Home Page for Web authoring and with Photoshop and Adobe ImageReady for image editing.

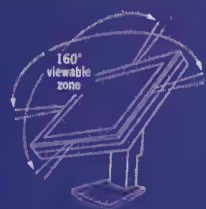
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MultiSync LCD1510™	15"	1024x768	15.4 lbs/8.0 lbs w/o stand	yes	yes	yes
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ArchiCAD 6.0

BUILD ROME IN A SINGLE DAY

ARCHITECTS FACE TWO DESIGN challenges: drawing something impressive enough to win a commission and then creating plans to turn the concept into a real building. Graphisoft's ArchiCAD 6.0 does a fine job of helping you meet both challenges. New 3-D features extend the "wow the client" impact of ArchiCAD creations, and expanded groupware functions greatly simplify the collaborative effort common on large projects.

We Do Buildings

One key to ArchiCAD's success is the program's pure specialization in architecture; ArchiCAD is rather awkward for

(see "X-ray Vision") speeds design checking by letting you quickly zoom in on details in the drawings.

Do It Together

The program's new TeamWork function, a unique adaptation of CAD software to a networked world, lets you establish separate users and passwords for each part of a design project.

The program does an excellent job of translating files that are in AutoCAD v14 DWG, which is currently the most used CAD format. No other program is as adept at preserving object specifications when converting to and from the format.

ArchiCAD also makes it easy to collaborate with builders; you can automatically generate component and materials lists from drawings. You can also print your 2-D drawings on any CAD-scale plotter of the last decade.



X-ray Vision ArchiCAD's QuickViews palette gives you a scaled-down overview of large drawings, and it has an adjustable rectangular selector for selecting drawing views for the main window.

industrial or mechanical design. The program's object libraries consist exclusively of architectural components, and the software itself is based on the concept of a Virtual Building.

ArchiCAD is a well-behaved Mac program, with intuitive menus and—new in this version—the ability to drag and drop objects into floor plans. The objects themselves, specified in ArchiCAD's Geometric Description Language, are intelligent; they contain extra information that lets the program decide what to do about intersections and other conditions, without user intervention.

New 3-D features enable you to view 2-D drawings from a 3-D perspective. The program also includes bundled utilities that let you produce photo-realistic virtual-reality walk-throughs of your designs. A new QuickViews feature

A Few Cracks

ArchiCAD can be a bit fussy. Instead of a single Open command on the File menu, it has two commands, each with multiple options. You need at least 64MB of RAM for easy use; the manual warns against using virtual memory, and the virtual-memory hit is harsh if you do use it—with window-open, -close, and -switch operations running at 10 to 15 seconds each on a fast G3.

ArchiCAD also uses a keyboard-port hardware lock—even beefed-up laptops and iMacs can't run the program. The lack of laptop support can be a problem for people doing on-the-road presentations.

Macworld's Buying Advice

ArchiCAD 6.0, with its dedicated focus on a single market, has evolved into the Mac program of choice for architects. If you do mechanical design, look elsewhere, but if you design buildings, ArchiCAD can seriously improve productivity throughout your office.—CHARLES SEITER

RATING: ★★★★★ **PROS:** Intuitive tool set and huge object libraries, all geared to architectural CAD. **CONS:** Hefty RAM requirement; no laptop support. **COMPANY:** Graphisoft (415/703-9777, www.graphisoft.com). **LIST PRICE:** \$3,995.

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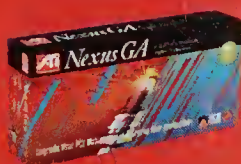
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SECOND LOOK

Mailsmith 1.1

IMPROVED E-MAIL PROGRAM


MACWORLD'S REVIEW OF MAILsmith 1.01 (October 1998) praised the program for its fine text-handling, searching, and mail-filtering abilities but lamented its sluggish performance and utilitarian interface. Bare Bones Software has successfully conquered the performance issues in version 1.1, which is a free upgrade for registered users. The new version is considerably faster in everyday use and stores information more efficiently, requiring less disk space.

Since the database does a better job of managing disk space, my mail database shrank by about 40 percent. A new menu command allows current Mailsmith owners to reclaim wasted space and shrink the size of their mail databases.

Although most of this release focuses on performance enhancements, Bare Bones has also added a few new features. Mailsmith 1.1 sports contextual menus for controlling mail management and address books, and it auto-completes addresses from your address book as you type them in a new message. Previously, Mailsmith used the 8 Finder labels to color and categorize messages; now there are 24 additional customizable labels. And a nice filtering enhancement called Make a Filter lets you easily build filters using the attributes of the currently selected message. The program also now works with Aladdin Systems' Stuffit Deluxe and Stuffit Expander.

Macworld's Buying Advice

Mailsmith's improved performance makes the program less cumbersome to use, but now Bare Bones needs to perk up the interface and include more features found in other programs such as Microsoft's Outlook Express and Qualcomm's Eudora Pro. If you're interested in a new e-mail program with excellent text-handling capabilities, though, Mailsmith 1.1 is worth a look.—TOM NEGRINO

RATING:  **PROS:** Improved performance; enhanced convenience features. **CONS:** Interface is still clunky and unappealing. **COMPANY:** Bare Bones Software (781/687-0700, www.barebones.com). **LIST PRICE:** \$79.

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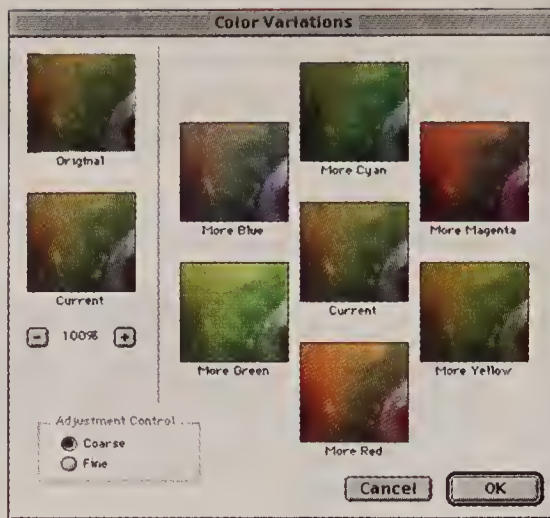
Digital Darkroom 1.5

IMAGE EDITOR NEEDS DEVELOPMENT

AIMED AT NOVICES WITH BASIC image-editing needs, MicroFrontier's Digital Darkroom 1.5 offers a simple interface, a basic tool set, and a few automatic-correction features. If your scanner or digital camera came bundled with an image editor such as Adobe PhotoDeluxe (see *Reviews*, April 1998) or Kai's Photo Soap (see *Reviews*, October 1997), you already own a far superior image-editing application.

Digital Darkroom's simple tools are contained in a single floating palette. Along with the usual complement of tools, the palette includes a gradient tool and a basic text tool but no graphics primitives such as circles or squares. You make selections by using marquee, magic-wand, and lasso tools that prove adequate for simple touch-ups and basic compositing; Digital Darkroom lacks the ability to feather selections to create smoother editing transitions.

An Option button lets you change the brush tool's size and shape and the line tool's width. Unfortunately, the eraser is limited to an unchangeable square, so erasing is difficult in tight areas. Additionally,



Variations on a Theme Digital Darkroom's Color Variations filter provides a simple interface for adjusting the color of an image or a selection.

Digital Darkroom's lack of smudge and blur tools makes it nearly impossible to do smooth, seamless touch-ups.

Digital Darkroom supports Photoshop plug-ins, including Acquire modules, which allow you to import graphics directly from scanners and digital cameras. For color correction, Digital Darkroom provides a Brightness and Contrast filter as well as a Color Variations tool. Free of complicated levels or curves dialog boxes, Digital Darkroom's color correction is easy to use. For each filter, the current selection is shown, sur-

rounded by swatches of variations (see "Variations on a Theme"). Clicking on a variation updates the center swatch and provides a new group of choices.

The program's AutoMagic menu provides automatic correction and editing features. The menu's Auto Enhance feature does a good job of equalizing the tonal range of an image; the Red Eye and Scratch Removal filters also prove useful.

Although the program includes a virtual-memory scheme that makes it possible to edit large images, Digital Darkroom's performance can be a bit sluggish, even on a speedy modern Mac.

Macworld's Buying Advice Digital Darkroom's features can be found in any number of image-editing programs, many of which are provided free with scanners and digital cameras. If you lack one of these bundled applications, you'll find more correction features and a simpler, step-by-step interface in Adobe PhotoDeluxe for just \$10 more than Digital Darkroom's list price.—BEN LONG

RATING: **PROS:** Inexpensive, functional basic tool set. **CONS:** Lacks the automation and more powerful tools of its competitors. **COMPANY:** MicroFrontier (515/225-9800, www.microfrontier.com). **LIST PRICE:** \$39.95.



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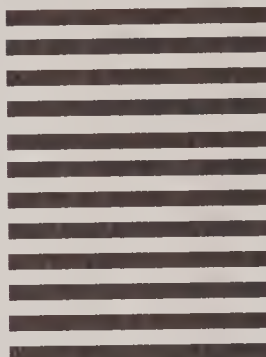
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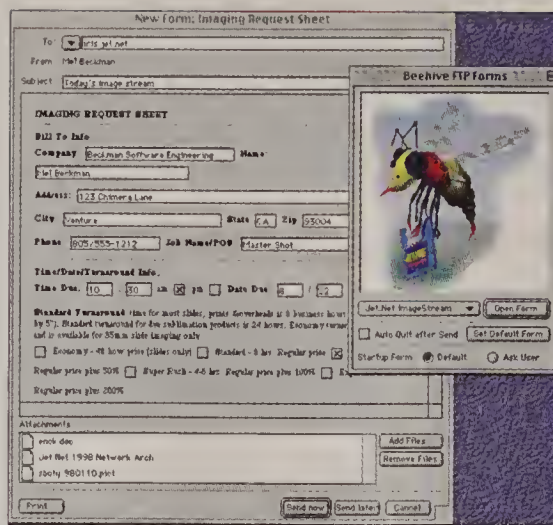
FTPForms 2.3

STREAMLINED INTERNET FILE EXCHANGE

GRAPHIC-ART SERVICE BUREAUS yearn for a way to let customers submit materials via the Internet. Alas, the Net's primary file-transfer tool, FTP, is woefully inadequate for the job. Pine Island Software's FTPForms 2.3 streamlines FTP-based customer input, letting you distribute a preprogrammed FTP client application to which customers simply drag and drop the work they want to send. It also collects order information, automatically downloads incoming files, and sends e-mail notifications to customers. And it does it all with a level of security not possible with generic FTP file exchange.

After you configure FTPForms with a single log-in ID and password, your customers download the client from your Web site. When the customer drops a file for transmission, a customized order-submission form pops up on-screen. FTPForms automatically logs in to your FTP server and uploads the selected files, using encryption to maintain security; customers never know the name, user ID, or password of your FTP server.

Back at your office, you run the FTP-



Your Order, Please FTPForms automatically accepts customer orders, transfers the files to your FTP server, and delivers e-mail notification of receipt.

Manager, which logs in to your FTP server at predefined intervals to check for incoming files. When new files arrive, FTP-Manager automatically downloads them and optionally prints the customers' order forms on your local printer. It also notifies customers via e-mail that you've received their work.

The client comes in both Mac and Windows versions. FTPForms works with any standard FTP server—including the Unix systems common among Internet service providers—so you need not run a dedicated

server on your premises. The package includes sample HTML forms that you can customize, using any standard HTML editor.

FTPForms has one security weakness: although it encrypts FTP log-in values stored with the client application, these values travel unencrypted to the Internet. An interloper—including one of your customers—could use a TCP/IP network analyzer such as EtherPeek (see *Reviews*, May 1998) to intercept data and gain access to proprietary files. A better approach would be for FTPForms to encrypt the files and order forms themselves during upload and decrypt them on download.

Macworld's Buying Advice FTPForms automates one of the most time-consuming aspects of the service-bureau business while improving customer service in the bargain. Cross-platform support and attention to privacy add to its value.—MEL BECKMAN

RATING: ★★★★★ **PROS:** Customizable drag-and-drop client; site log-in encryption; cross-platform support; automatic download and e-mail notification. **CONS:** No data encryption. **COMPANY:** Pine Island Software (317/841-0638, www.thebeehive.com). **LIST PRICE:** 1 to 10 users, \$29.95 each; 50 users, \$595; 100 users, \$995; site license, \$1,595.

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The ScanMaker 4 features Microtek's own patented **Emulsion Direct Imaging Technology™ (E.D.I.T.™)**. Unlike a conventional flatbed scanner which scans film with an attachable transparent media adapter (usually an accessory item purchased separately), the ScanMaker 4 captures images directly from the surface of film transparencies or negatives — *internally*. No more light refraction problems. No more annoying Newton rings. Just amazingly sharp images loaded with detail. Photographic prints, illustrations, or documents up to 8.5" x 14" can be scanned on the scanner's upper bed.

The scanner's 36-bit color depth (input and output), 600 x 1200 dpi optical resolution (up to 9600 dpi enhanced) and superior optics deliver performance suitable for any company's graphic needs. All this and some great software for a suggested retail price of only \$699. It's almost like getting two scanners for the price of one.



ScanMaker 4

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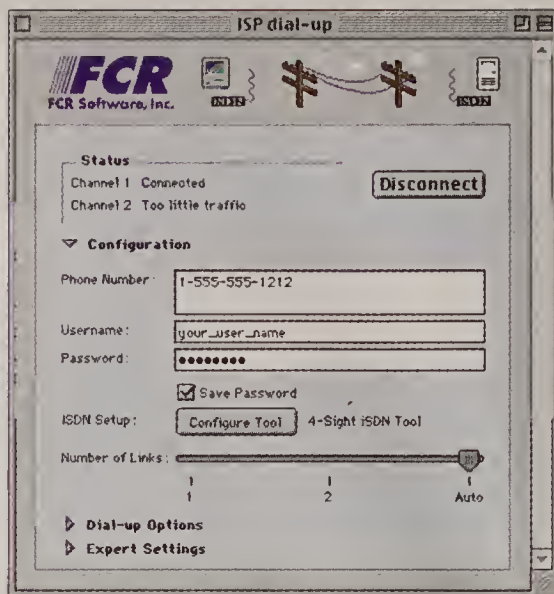
LinkUPPP Duo 1.1

FLEXIBLE PPP DIALER FOR ISDN

THE PROMISE OF ISDN IS BANDWIDTH, but the software that comes with many ISDN cards doesn't support 128-Kbps capability or supports it inflexibly. FCR Software's LinkUPPP Duo 1.1, a PPP dialer that works with most popular ISDN cards, provides full user control over bandwidth allocation. You can set it to use only a single B-channel or both channels or have it automatically kick in the second channel as needed.

With automatic bandwidth assignment enabled, LinkUPPP Duo typically uses only one channel—a money-saving maneuver. If you request a large file, LinkUPPP Duo will detect the change in activity and automatically connect the second channel to speed the download. After the download, when you're back to low-bandwidth browsing, LinkUPPP Duo disconnects the second channel.

You can also configure LinkUPPP Duo to dial automatically when you initiate a Net activity, such as checking e-mail or requesting a Web page. It can redial automatically when a connection drops or terminate a connection that's been idle. Expert settings let you access a host of acronym-laden advanced



On Again, Off Again LinkUPPP Duo 1.1 automatically connects an ISDN line's second channel when you perform a high-bandwidth operation and disconnects the channel when traffic is lower.

features that only a network manager could love. And, yes, it provides full support for AppleTalk—as well as TCP/IP—over PPP. LinkUPPP Duo works with any internal ISDN card that has an accompanying Communications Toolbox tool and that's capable of block-synchronous communication.

LinkUPPP Duo is a bit pricey: \$99.95 via FTP, \$10 more if you opt for disks. Its only other shortcoming is the lack of a hard-

copy manual, an oversight that's bound to produce anxiety in some users, particularly during setup. Most of the HTML-based documentation is clear and easy to follow, but there are some rough spots.

The company's related product, LinkUPPP Quattro 1.1, supports the combination of up to four ISDN B-channels for a maximum potential bandwidth of 256 Kbps. Released as we went to press, the company's LinkUPPP Turbo 3.0 lets you combine the bandwidth of two standard modems (up to 56K each) in a multilink PPP connection, providing up to 112 Kbps.

Macworld's Buying Advice By flexibly supporting multilink PPP connections, LinkUPPP Duo 1.1 lets you take maximum advantage of ISDN's custom bandwidth allocation. For the most part, it's easy to set up and use. And it works. If you're frustrated by the limitations of your ISDN card's bundled software, give LinkUPPP Duo a try.—HENRY BORTMAN

RATING: **PROS:** Dynamic allocation of ISDN B-channels; robust; broad set of user-configurable options. **CONS:** No printed documentation; a bit overpriced. **COMPANY:** FCR Software (617/494-1300, www.fcr.com). **LIST PRICE:** Via FTP, \$99.95; on disk, \$109.95.

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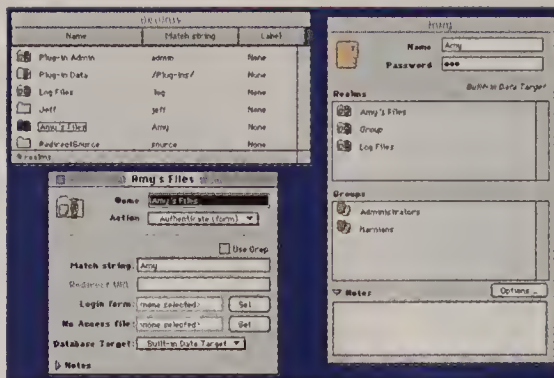
WebSentinel 2.0

MASTER OF THE REALMS

FOR MACINTOSH WEBMASTERS who find their server's built-in security limited and tedious, Purity Software's WebSentinel 2.0 promises relief. This WebStar API (W*API) plug-in provides support for multiple database mechanisms and an attractive interface for an array of security services, including new features such as support for workstation restrictions, HTML log-in forms, and account expiration.

WebSentinel 2.0 extends the realms model of Web security common on Macintosh Web servers. Rather than applying permissions to a folder (such as the Logs folder), you set permissions for a group of URLs (the realm) that share some specific text (any URL that contains .log, for example). This method can be very powerful, allowing administrators to secure like files regardless of their location on the server.

In addition to standard HTTP authentication for realms, WebSentinel 2.0 supports HTML-forms-based authentication, allowing you to present personalized log-in screens. Webmasters can designate customized forms and no-access files for each realm. WebSentinel 2.0 even offers Redi-



Lockdown WebSentinel 2.0 Admin has a Finder-like interface for defining users, groups, and realms.

rection realms, so requests for certain URLs can be automatically sent to another page.

Once realms are defined, you grant access to users, groups, and workstations. In addition to simple user names and passwords, administrators can define expiration criteria for each user, consisting of a date, a number of days, or even a number of accesses.

WebSentinel 2.0 supports multiple "data targets" (back-end databases); you can save your information to more than one type of outside database, including those in Purity's own Verona format and those in FileMaker Pro.

It took me about 60 seconds to install WebSentinel 2.0 on a Mac server running StarNine's WebStar 3.01. After another five minutes, I had my users, groups, and realms

up and running. Both the administrative application and Web-browser interface are attractive and usable, but a few very minor interface glitches exist. Although assigning access to users and groups is quite simple, WebSentinel 2.0 needs to offer an easier way to display all users and groups assigned to a given realm within a single window.

The security options all worked nicely, and there was no noticeable performance hit with ten users and realms. I did encounter problems when trying to use the plug-in with WebTen, due to an inconsistency with Tenon's W*API implementation. Tenon has a patch that addresses these problems.

Macworld's Buying Advice Macintosh Webmasters will definitely find that WebSentinel 2.0 offers an elegant extension of WebStar's realms-based security. But those dissatisfied with the whole realms concept should look to other options, such as Tenon's WebTen, which offers built-in file and folder security.—JEFF DAVIS

RATING: ★★½ **PROS:** Elegant interface; authentication forms; multiple data targets.

CONS: Lack of file and folder security; no easy way to view access by realm. **COMPANY:** Purity Software (512/328-2288, www.purity.com). **LIST PRICE:** \$199 (upgrade from 1.0, \$79).

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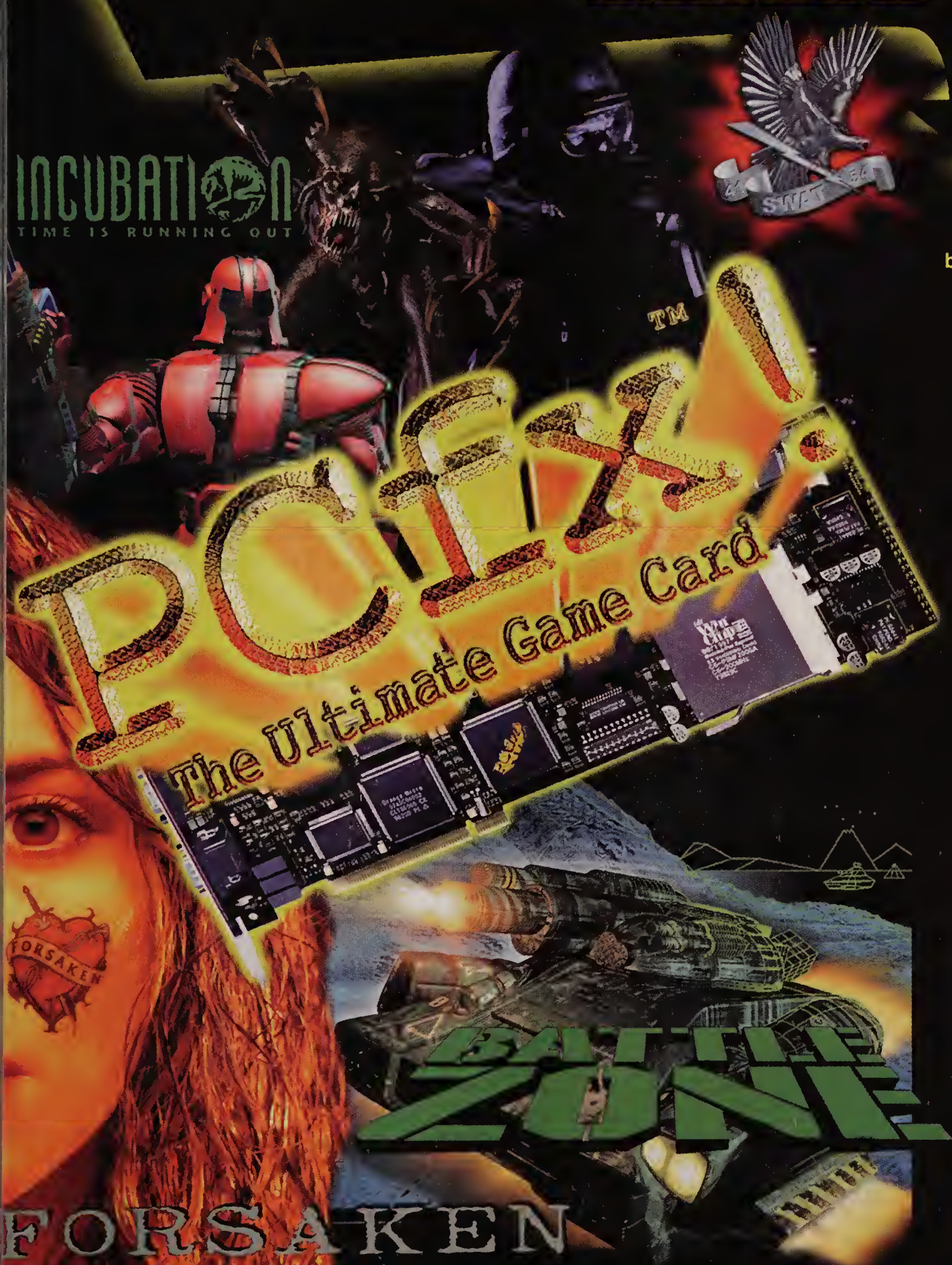
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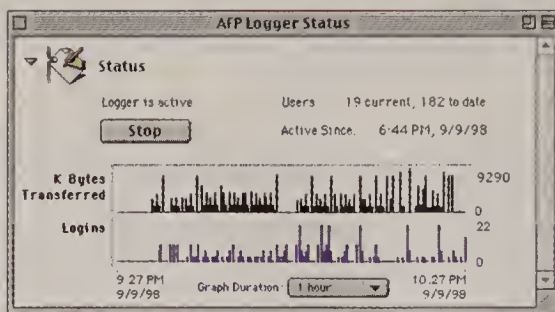
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AFP Logger

KEEPS AN EYE ON APPLESARE SERVERS

APPLESARE IP IS A BOON TO Mac network administrators, letting them use TCP/IP to extend Apple File Protocol (AFP) file sharing to users on remote networks and even the Internet. But enhanced access inevitably increases server workload, and wider availability brings up questions of security: just who is using the data on this server, anyway? Open Door Networks' AFP Logger 1.0 saves the day, by making a record of user log-ins and log-outs, file accesses, server state changes, and file-system errors. AFP Logger's real-time status display shows server workload at a glance for any time interval of up to a week, and a textual log file gives you a permanent record of every user's activities.

Running in the background on AppleShare IP 5.0 or later file servers, AFP Logger operates as an application—no extensions or control panels required—and displays a real-time activity window showing a histogram of user log-ins and the amount of data transferred. You can change the scale of the graph incrementally, making it easy to locate periods of high activity. Alas, you can't scroll the histogram, so



Captain's Log AFP Logger's real-time display shows AppleShare server activity at a glance.

there is no way to zoom in on a period.

AFP Logger's real value, however, is the log file. Each time an AppleShare event occurs, the program records it, noting the name and IP or AppleTalk address of the user, the type of event, and its success or failure. For example, AFP Logger records every log-in event, whether successful or not. It also tracks file opens, closes, and deletes; file-system errors; password changes; and on the user log-out record, the total number of bytes moved during a given user session. Once you analyze this information, it identifies the busiest users and most-popular files, and it alerts you to security or network-integrity problems. You can select the level of detail you want recorded, so you can, for example, exclude routine Finder file accesses. An included AppleScript helps keep the log's file size manageable and simplifies

locating historical information for analysis.

Unfortunately, AFP Logger doesn't include a log-analysis tool. The log file is written in StarNine Technologies' WebStar-extended log-file format, so most any WebStar log-file analyzer—including Open Door's LogDoor (see *Reviews*, July 1998)—can process it, cataloging usage by file and user. AFP Logger's only other conspicuous defect is that it doesn't record printer-sharing events—critical information in service bureaus, where it's used to track the use of expensive consumables.

Macworld's Buying Advice For those who run AppleShare IP and have high-volume traffic or permit remote access, AFP Logger helps keep an eye on server activities. Its few user-interface glitches don't detract from AFP Logger's primary purpose—recording AppleShare events—but the lack of a log-analysis tool means that you have to buy at least one more utility to get the real benefit.—MEL BECKMAN

RATING: ★★★ **PROS:** Real-time summary display; WebStar-standard log-file format; logs error events. **CONS:** No log-analysis tool; doesn't log printer-sharing events; can't scroll graph. **COMPANY:** Open Door Networks (541/488-4127, www.opendoor.com). **LIST PRICE:** \$299.

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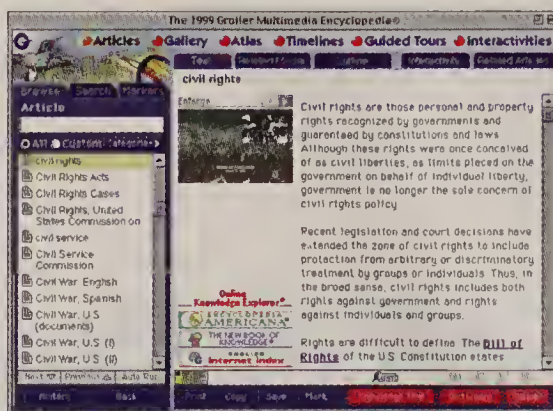
1999 Grolier Multimedia Encyclopedia—Deluxe Edition

RICH MULTIMEDIA AND UPDATED INTERNET LINKS ENHANCE POPULAR CD-ROM REFERENCE TITLE

WHEN YOU LIVE IN AN ERA OF rapidly changing information, you need reference materials that keep you up-to-date. That's the promise of the 1999 Grolier Multimedia Encyclopedia—Deluxe Edition, a two-CD package targeted at junior high and high school students. In addition to 36,000 articles, the software features Web links to new and updated articles, along with two online encyclopedias, The New Book of Knowledge, for elementary school students, and Encyclopedia Americana, for high school, college, and adult users.

The encyclopedia uses a browserlike interface, with a search index on the left and tabs along the top that let you quickly move among different kinds of information. For example, choose an article on civil rights, and you can view a video of the 1963 March on Washington, hear a part of Martin Luther King Jr.'s "I Have a Dream" speech, as well as bring up lists of related articles, photos, and video or sound clips.

Browsing and searching capabilities are strong. By default, all articles are listed alphabetically, but you can find topics



Browsing History The encyclopedia's browserlike interface makes it easy to locate related topics.

through several techniques. You can simply enter the first few letters of the article name in the browse field, use category filters to narrow the list of topics, or search for stories using keywords.

The encyclopedia includes QuickTime movies, sound clips, interactive guides to academic subjects, and, new in this version, virtual-reality panoramas. Video clips and other storage-intensive media elements are housed on the second CD, which helps to minimize disk swapping as you're browsing

text and still images on the first CD.

A built-in atlas lets you quickly zoom in on major cities and see their best-known attractions. In a few mouse-clicks you can move from a map of the United States to a photo of Philadelphia's Liberty Bell.

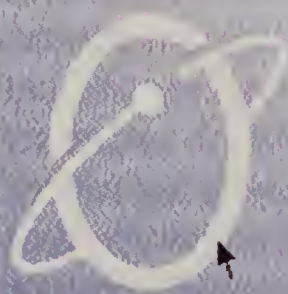
The package also includes the 250,000-word American Heritage College Dictionary, third edition, but it's not integrated with the other content. Instead, you click on the Dictionary button to look up a word.

Macworld's Buying Advice The Grolier Multimedia Encyclopedia lacks the depth of information found in the Encyclopædia Britannica CD (see "10 Delightful Discs," in this issue) but does offer a wealth of multimedia learning aids and updated Web links. It's a great reference title for junior high and high school students.—STEPHEN BEALE

RATING: **PROS:** Strong multimedia features; Web access to additional articles. **CONS:** Dictionary not integrated with other material. **COMPANY:** Grolier Interactive (203/797-3530, www.grolier.com). **LIST PRICE:** \$59.99.

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Ralph Berger
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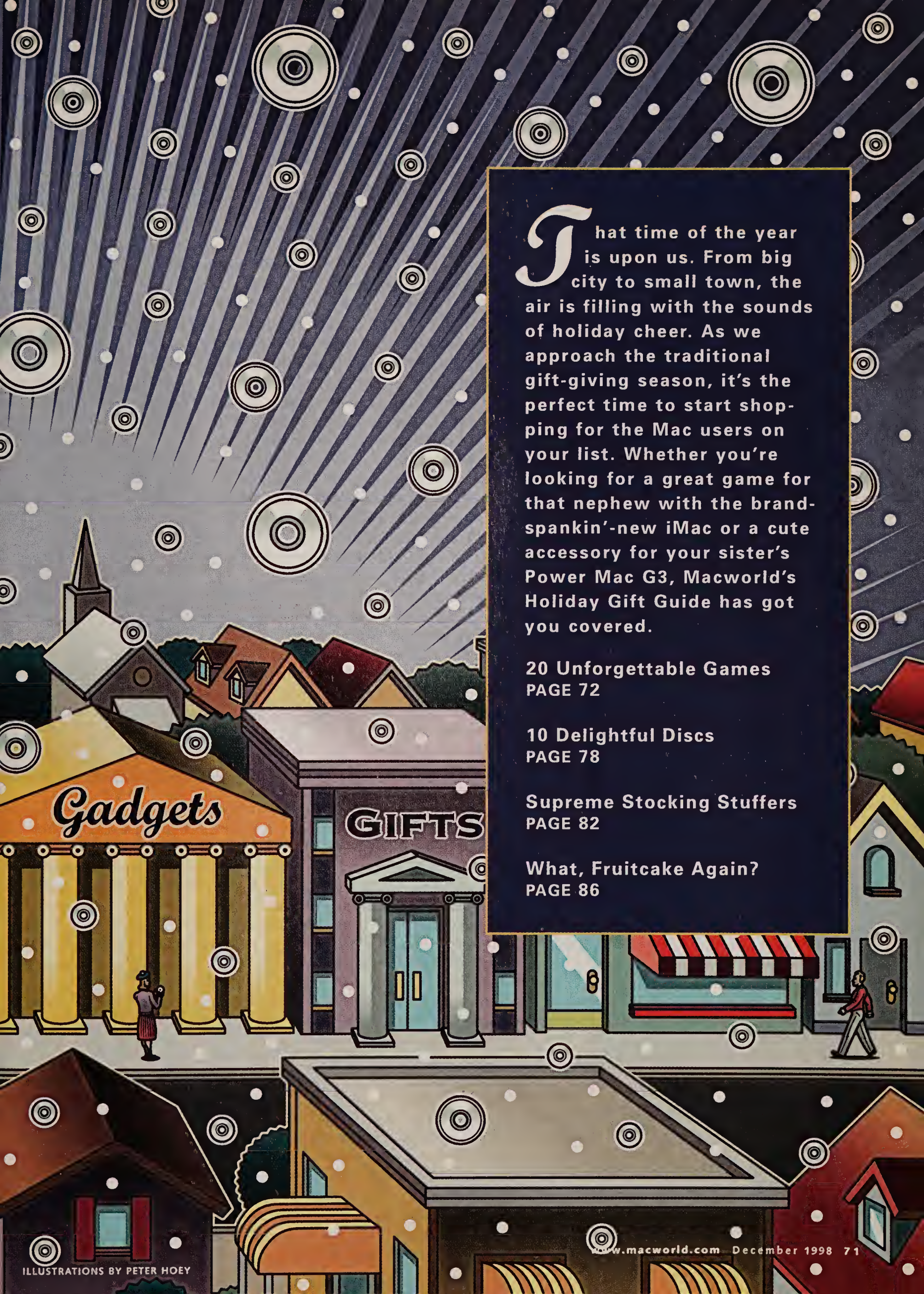


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MACWORLD'S

Holiday Gift Guide





That time of the year is upon us. From big city to small town, the air is filling with the sounds of holiday cheer. As we approach the traditional gift-giving season, it's the perfect time to start shopping for the Mac users on your list. Whether you're looking for a great game for that nephew with the brand-spankin'-new iMac or a cute accessory for your sister's Power Mac G3, Macworld's Holiday Gift Guide has got you covered.

20 Unforgettable Games
PAGE 72

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PAGE 86



MACWORLD'S GAME HALL OF FAME

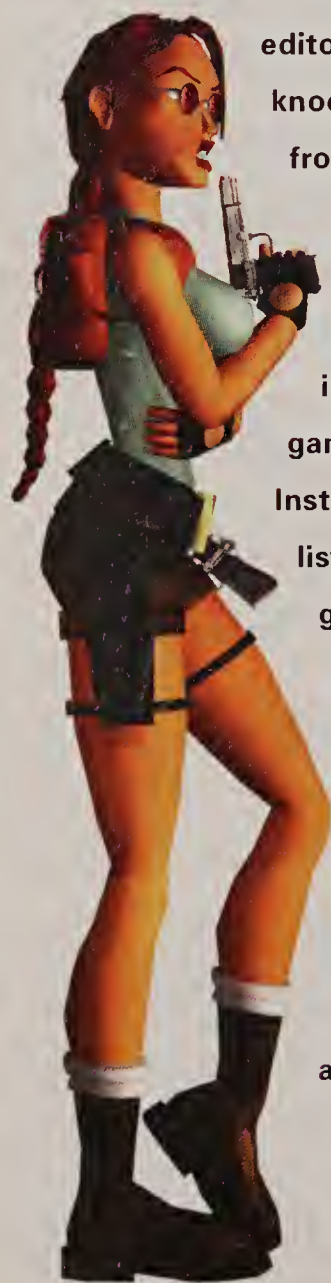


PRESENTS

20 Unforgettable Games

by Cameron Crotty

OUR NATIONAL OBSESSION WITH THE latest fads at the expense of golden oldies has gotten on the nerves of the Macworld Game Hall of Fame's executive committee. "I love new games as much as the next person," opined a Hall curator as she gestured at the iMac running *Tomb Raider II* over in the corner. "But if we ignore the classics, what's the point of having a Hall of Fame?"



So this year when the editors of *Macworld* came knocking at the Hall's front door in sleepy Pittsfield, Massachusetts, we decided to do more than simply induct six worthy new games into the Hall. Instead, we compiled a list of 20 great Mac games, both new inductees and all-time classics. Because regardless of whether it was released this year or five years ago, a classic is still a classic.

DON'T BELIEVE THE HYPE

Tomb Raider II



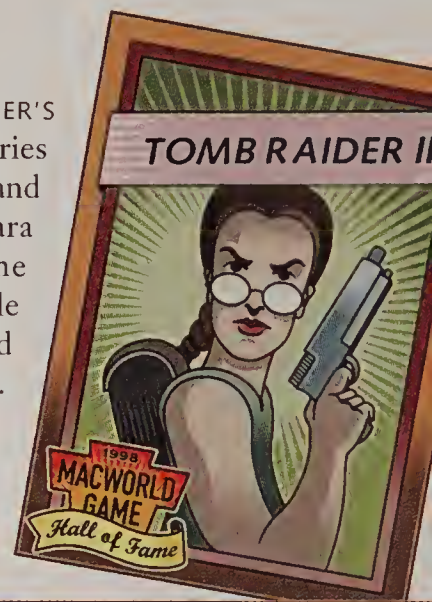
IT'S EASY TO GET LOST IN TOMB RAIDER'S hype. We've been inundated by stories about how its star, the well-endowed and completely computer-generated Lara Croft, is either the death knell of the feminist movement or a strong female role model in the male-dominated world of games—or maybe both. What's lost in this storm of publicity and debate is that *Tomb Raider* is simply a great game.

In *Tomb Raider*—a huge seller for Windows and the Sony PlayStation, and now finally available for the Mac—you guide Lara Croft through an *Indiana Jones*-esque three-dimensional world of temples and caverns in search of priceless artifacts. The interface is similar to that of a first-person shooter game such as *Unreal*, *Doom*, or *Marathon*, but your perspective is actually slightly above and behind Lara herself, staring at her polygonal posterior. Lara's adventures involve a lot of gunplay, but exploration and problem solving are the real keys. You find hidden places to explore by swimming, climbing, and jumping, not to mention avoiding diabolical traps such as giant rolling boulders and pits of spikes. The graphics are impressive, especially if you've got a 3-D-accelerator card installed, and the images in the Mac version are clearly superior to those in the PlayStation version.

Tomb Raider II is the first of the *Tomb Raider* games to come to the Mac, and it's a definite improvement over the original game. In addition to walking and running, Lara gets to ride a motorcycle and a powerboat, and she fights villains that are much wilier and harder to kill than those in the original *Tomb Raider*. And there's more *Tomb Raider* on the way—Aspyr Media will release *Tomb Raider Gold*, featuring the original *Tomb Raider* with four additional levels in early 1999.

But back to our original dilemma: does Lara Croft belong in the pantheon of women heroes right alongside Wonder Woman and Buffy the Vampire Slayer, or is she just a pumped-up Spice Girl? The cooler heads at the Game Hall of Fame will leave that up to you. We're just happy that Mac users finally have a chance to play this great action-adventure game.

WHY IT'S COOL: Impressive graphics and game play lead to hours of arcade-style action. **WHO IT'S FOR:** Women tired of male-character-only adventure games and men secure enough to admit that *Indiana Jones* has met his match. **FROM:** Aspyr Media; 512/708-8100, www.aspyr.com; \$50.



Myth: The Fallen Lords



REAL-TIME STRATEGY GAMES CATER TO THE ARM-chair general, but some people prefer the life of an armchair lieutenant. For them, there's Myth: The Fallen Lords, a war game of staggering realism that focuses on individual soldiers fighting individual, *mano a mano* battles.

Want to live with the hellish uncertainty of the battlefield—to be concerned with the advantages (and dangers) of terrain, the threat of ambushes, and the limitations of an army on patrol? If so, then Myth is your game.

Like an officer in the field, you're given a number of troops to command and objectives to accomplish. After that, you're on your own. Myth teaches the importance of reconnaissance, flanking maneuvers, and seizing the high ground—and does it all with a hellishly real 3-D interface that puts you smack in the middle of the battlefield.

Although Myth was the highlight of last year's holiday season, it arrived too late to meet the Hall's strict eligibility requirements for 1997. But we heartily give it the nod this time around as we anxiously await this winter's sequel, Myth II: Soulblighter (see the sidebar "Next Year's Hall Hopefuls").

WHY IT'S COOL:

Amazing 3-D landscapes and challenging, realistic battle strategy. **WHO IT'S FOR:** Bravehearts-in-training who want complete control over their soldiers.

FROM: Bungie Software; 312/397-0500, www.bungie.com; \$40.



A CLASSIC PUZZLER

Shanghai: Dynasty



WAR GAMES AND ADVENTURES COME AND GO, BUT a well-designed puzzle game, seasoned with just a touch of random chance, can hold one's attention for years.

Classic Shanghai adds spatial manipulation and strategy to the simple pattern-matching of traditional solitaire. Tiles are randomly piled in a five-layered pyramid, and the object is to remove them by pairing them off. You need a bit of luck to clear the board, but it's your wits that make the difference in Shanghai. Once you've learned the basic game, the challenge of solving a puzzle where you can see almost all the pieces is nearly irresistible.

For Shanghai: Dynasty, Activision has added four other games. There's a child's version of Shanghai and three multiplayer games, including Mah-Jongg. Sadly, the company has not included network play with the Macintosh version this time.

WHY IT'S COOL:

Beautiful graphics and lots of options, plus a classic puzzle that can't be improved on. **WHO IT'S FOR:** Those who prefer quieter pursuits to gunning and running. **FROM:** Activision; 310/255-2000, www.activision.com; \$40.



BEYOND BLOOD AND GUTS

Riven



Myst



THE GAME HALL OF FAME RECEIVES MANY VISITORS, generally avid gamers and history buffs. But occasionally, a passerby will poke a curious nose into the Hall's virtual lobby and inquire about the nature of the establishment. Is it truly devoted completely to Macintosh games, and is there a section for someone who likes the idea of computer games but isn't interested in all that shooting, shouting, and general hullabaloo?

That's when our doorman smiles warmly and ushers the visitor into the newly completed Rand and Robyn Miller Atrium, to view the Miller brothers' two masterworks: Myst and Riven. Less like computer games than like wonderfully illustrated novels, both Myst and Riven transport you to a world where deciphering where you are—and why you're there—is all part of the fun. While both games lead you toward a final goal, the true point of Myst and Riven is to explore the gorgeously rendered worlds and the characters that live in them. We heartily recommend both Myst and Riven to gamers and nongamers alike.

WHY THEY'RE COOL: A stunning combination of story line, graphics, and sound pulls you into an amazing fictional world. **WHO THEY'RE FOR:** People who enjoy beautiful graphics, brain-teasing puzzles, and games that don't induce too much stress. **FROM:** Red Orb Entertainment; 415/382-4777, www.redorb.com; Myst, \$30; Riven, \$40.



SimCity 2000 Special Edition

★★★★½

THE TAMAGOTCHI CRAZE SEEMS TO HAVE COME and gone, thankfully, but we've all still got that urge to nurture a living thing without the attendant mess. In SimCity 2000, your city itself is a living, breathing organism with intricacies that put the Tamagotchi to shame.

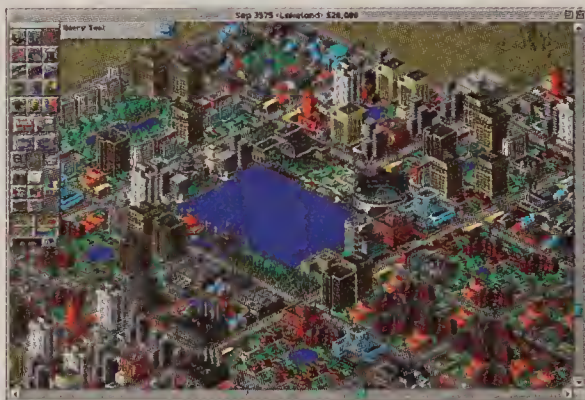
From the initial groundbreaking through labor strikes, earthquakes, political upheaval, and traffic jams, SimCity 2000 puts you in the hot seat as mayor, city council, and dictator-for-life all rolled into one. Your job is simple: keep your citizens happy. You can build the perfect Smallville, USA, or strive for a metropolis to rival New York. SimCity 2000 takes the vision of the original SimCity and adds significant complexity.

Sure, SimCity 2000's been around for years. But it still keeps us coming back for more. Don't be surprised if you find yourself leaving your Mac on at night and waking up early just to see how your city grew.

WHY IT'S

COOL: Endless possibilities make it truly addictive.

WHO IT'S FOR: Mayoral hopefuls—and would-be Godzillas. **FROM:** Maxis; 650/513-7555, www.simcity.com; \$40.



Civilization II

★★★★

PEOPLE DON'T USE THE TERM GLOBAL CONQUEST anymore unless referring to Microsoft. But if you do, Civilization II will provide the scope you need.

Civilization is one of the few turn-based strategy games (in which each participant—human or computer—takes turns) that we recommend. But in this case, you'll be thankful for the extra time to contemplate your moves. Civilization II is immense, offering you the chance to build an entire civilization up from almost nothing. You begin with some settlers and fertile land, and start to build cities. If you're skillful, you can "win" at Civilization II without even firing a shot. But after thousands of years of pacifying your citizens and bluffing aggressive competing civilizations, you'll still feel as if you've been through a war.

WHY IT'S COOL: Complexity that will keep even the hardest-core strategy gamers engrossed.

WHO IT'S FOR: Closet Napoleons who like the idea of taking over the world. **FROM:** MacSoft; 612/509-7600, www.wizworks.com/macsoft/; \$50.



Unreal

★★★★½

THE CURATORS AT THE Game Hall of Fame have grown a little tired of stalking through corridors, weapon bobbing, firing at beasts of questionable origin for little more purpose than to watch them explode. Run, shoot... yawn.

At least, that's what we thought before we launched Unreal. Mind you, this is one of several games this year that absolutely require 3-D-acceleration hardware. That said, Unreal took our breath away with fluid moves and scary monsters.

We don't induct new games into the Hall if they're simply eye candy. Unreal leaves room for atmosphere, exploration, and plot. Instead of facing hordes of easy-to-kill monsters, you're up against enemies that are smaller in number but incredibly ferocious and devious, and the story line stays strong throughout the game.

WHY IT'S COOL: Brains are as important in this game as brawn. **WHO IT'S FOR:** Gamers with 3-D-acceleration hardware who want strategy with their action. **FROM:** MacSoft; 612/509-7600, www.wizworks.com/macsoft/; \$50.



The iMac Makes a Play for Gamers

When Apple announced the low-cost iMac, the Game Hall of Fame executive committee threw a party. Why? In the eyes of the Hall, a consumer Mac is a gaming Mac. And now that we've had a chance to spend some quality time with an iMac, we know that's the truth.

The iMac has everything the average Mac gamer needs. It's fast: The iMac's 233MHz chip is the lowest on the PowerPC 750 totem pole, but all the G3 chips are *much* faster than the older PowerPC CPU's. Even better, the iMac comes with 3-D-acceleration hardware built in. It isn't cutting-edge, but for most of the games shipping through the next year, it'll be fine.

Apple also packed plenty of fringe benefits. There's adequate RAM, a big hard drive, and a fast CD-ROM. The 15-inch display is sharp and bright, and the speakers kick out good sound. There's built-in Ethernet for network play over a LAN, and a fast-as-it-gets 56-Kbps modem for connecting to the Internet. The Universal Serial Bus, or USB, is also a boon. Joystick and other game-input-device companies can now make a Mac version simply by writing a software driver.

The hard-core gamers will howl for faster processors and zip-pier 3-D hardware, but you'd be hard-pressed to buy a significantly more capable system for even twice the iMac's cost. Take it from the Game Hall of Fame—the iMac rocks.



Marathon Trilogy Box Set



MAYBE IT'S THE FLUID, ALIEN ARTWORK. PERHAPS IT'S the planet-hopping, psychological thriller of a story line or the high-explosive fun of network death matches. Whatever it is, in today's go-go, true-3-D world of first-person gunplay, the Marathon games collected in this omnibus edition remain a great value. Enamored as the Hall's staff is with the latest and greatest, Marathon has retained a firm place in our roster of regular network-based multiplayer grudge matches.

The sheer scope of the Marathon box set staggers even the most voracious gamer's imagination. Inside, Bungie has packed the three complete adventures that make up the Marathon Trilogy, the pre-Marathon adventure Pathways into Darkness, and level and environment editors that open Marathon's doors to anyone with a creative itch. This is a gift that smiles on those without the latest Mac hardware. You can play the Marathon games on a modestly equipped Power Mac 7100 without feeling as if you're watching a slide show.

WHY THEY'RE COOL:

Great network multiplayer games and an endless assortment of levels. **WHO THEY'RE FOR:** Offices that need to blow off steam; gamers with slower Power Macs. **FROM:** Bungie Software; 312/397-0500, www.bungie.com; \$40.



You Don't Know Jack: Huge

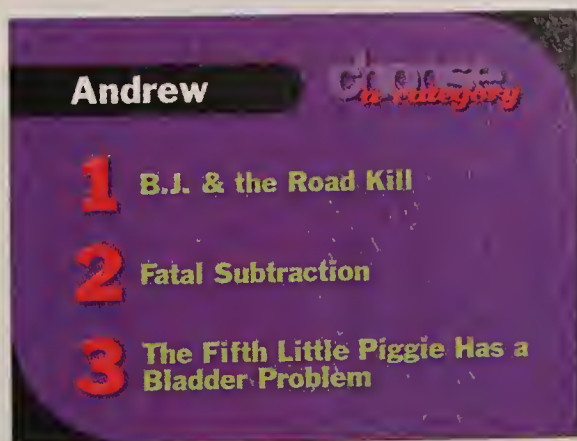


FORGET TRIVIAL PURSUIT, THE BOARD GAME THAT'S sure to drive your guests away (or put 'em to sleep). You Don't Know Jack is a game of trivia, but one that harnesses the multimedia power of your Mac to immerse up to three players in a dead-on re-creation of a game show, right down to the twitch-inducing need to beat your opponents by buzzing in first.

The secret is the game's boundless, irrepressible multimedia energy. The instant the game launches, a barrage of audio thrusts you into a bustling sound studio. The show's host is even more manic—an archly hip, acidly sarcastic mix of early Bill Murray and David Spade. When the host isn't squeezing the most out of a carefully tuned innuendo or crushing your ego after a wrong answer, you'll be grooving and grinning to the game's collection of musical cues and wacky sound effects. (The You Don't Know Jack: Huge package includes original Jack volumes 1 through 3, for a total of 2,400 hilarious brain-teasing questions.)

WHY IT'S COOL:

Music, sound effects, and attitude make it feel like a real game show. **WHO IT'S FOR:** People who are convinced they're smarter than those TV game-show contestants. **FROM:** Berkeley Systems; 510/540-5535, www.berkeleysystems.com; \$40.



Escape Velocity: Override



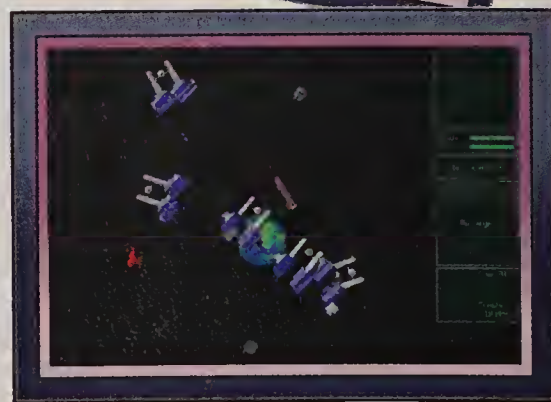
ESCAPE VELOCITY: OVERRIDE IS A RINGING TRIUMPH of sci-fi action-adventure. The game puts you in a spaceship cockpit as a daring, swashbuckling, Han Solo type. You start with a lousy shuttlecraft, some seed money, an enormous galaxy to explore—and nearly unlimited freedom to explore as you like, trying to make money and improve your ship and your social standing. Sure, you can be an honorable merchant or cozy up to one of the powerful interstellar governments. But you can also chuck it all and play evil space pirate.

Escape Velocity: Override is also a little-guy-makes-good story: Ambrosia Software builds world-class games for the Mac—and *only* the Mac. From Maelstrom, a cheeky Asteroids-for-the-nineties, to the addictive adrenaline rush of PegLeg, Ambrosia's games have continued to set a standard of quality for games on *any* platform. Your friends with PCs don't know what they're missing.

Escape Velocity: Override is less a game that you play from beginning to end than it is something you play with. And like its parent company, it's simply the best at what it does—on any platform.

WHY IT'S COOL:

A near-perfect blend of action, strategy, space exploration, and pure adventure. **WHO IT'S FOR:** Wannabe Han Solos—and Boba Fetts. **FROM:** Ambrosia Software; 716/325-1910, www.ambrosiasw.com; via download, \$25; with Ambrosia CD-ROM, \$30.



Cameron Crotty is a freelance writer and veteran Game Hall of Fame curator.

Tie Fighter 1/2

X-Wing

MORE THAN ONE ASSISTANT CURATOR AT THE GAME Hall of Fame is a closet *Star Wars* fanatic. Yet even those less devoted to the ways of the Force appreciate LucasArts' masterly space-combat games, Tie Fighter and X-Wing.

These games aren't *really* light simulators—nothing even remotely related to the true laws of physics exists in this galaxy far, far away—so the result is World War II-style, check-six dogfighting. But it's a thoroughly enjoyable fantasy.

The only thing missing from these games is the ability to fly head-to-head against a friend. Unfortunately, LucasArts' hot-and-cold relationship with Mac gamers is currently running cold. So while PC users can blast their friends out of the sky while playing X-Wing vs. Tie Fighter over a network, Mac users have to go it solo.

WHY THEY'RE COOL:

You get to fly a hot space-ship and pretend you're Luke Skywalker (or that you're shooting at him)—what could be cooler? **WHO THEY'RE FOR:** Joystick-equipped flying aces who can bull's-eye womp rats at 50 meters. **FROM:** LucasArts Entertainment; 415/472-3400, www.lucasarts.com; Tie Fighter, \$30; X-Wing, \$20.



Diablo 1/2

ROLE-PLAYING GAMES CAN BE A LOT OF FUN, BUT THEY USUALLY REQUIRE an attention to numeric detail reserved for highly paid accountants. If you haven't memorized exactly what that helmet will do to your hero's armor class, or how using a long-sword will affect his chances to hit a particular creature, you've already sealed your doom.

Diablo, on the other hand, retains all the stuff essential to a good fantasy role-playing game but builds it into an interface that lets you concentrate on the adventure at hand. Furthermore, the game casts off the usual turn-based structure in favor of exciting, real-time play. The game's painstakingly animated characters are also enchanting. Even if you don't generally like fantasy games, you'll be enthralled.

WHY IT'S COOL: Attractive graphics and usable interface get you into the game's fantasy world. **WHO IT'S FOR:** Anyone who's wished Dungeons and Dragons had more adventure and less dice rolling. **FROM:** Blizzard Entertainment; 310/793-0600, www.blizzard.com; \$30.



F/A-18 Korea 1/2

EVEN THE MOST DEDICATED MAC gamer can sometimes glance enviously over at the Windows world, awash as it is in a veritable sea of games. But when it comes to flight simulators, Mac gamers have no need to be envious. Graphic Simulations' F/A-18 Korea is one of the best, period.

From the first day that F/A-18 Hornet hit the streets, it offered a spectacularly realistic flying experience, and each subsequent release has managed to improve on that first rush of realism. With a 3-D-accelerator card in place, F/A-18 Hornet is so realistic that you'll stare in disbelief . . . until you get smoked by a surface-to-air missile, of course. Lesson learned: don't *ever* take your hands off the control stick!

The flight-simulator category is a hotly contested one at the Hall. Parsoft's excellent A-10 Attack: Cuba (972/379-4462, www.parsoft.com; \$46) runs a close second to F/A-18 Hornet. If you prefer to spend time moving mud on

ground attacks, A-10 Attack puts you in the driver's seat of the rough, tough Warthog. But whichever you prefer, take comfort: the Mac excels when it comes to flight simulators.



WHY IT'S COOL: Stunning graphics and impressive air combat will make you believe your life's actually in danger. **WHO IT'S FOR:** Amateur fliers for whom aviation means nothing without a little dogfighting. **FROM:** Graphic Simulations; 972/386-7575, www.graphsim.com; \$45.



Starcraft

ONE FACTION IN THE HALL'S brain trust constantly squawks that for every original game that's released, there are dozens of sequels and imitations. But repetition can breed improvement.

There's no better evidence than Starcraft. Just as with its predecessor, Warcraft, you build up your resources and send legions of troops into battle—but this isn't just a rehash of Warcraft with better graphics. Starcraft's three warring races (human, the buglike zerg, and the mechanical protoss) aren't mirrors of one another—their capabilities are radically different. Each species requires different strategies for victory.

If you're already a fan of real-time strategy, Starcraft doesn't disappoint; if you haven't yet succumbed to the heady thrill of ordering troops into battle—against a computer or against real-life opponents in a rousing network game—here lies a highly entertaining tour of duty.

WHY IT'S COOL: More-complex characters put a challenging spin on a classic warfare game. **WHO IT'S FOR:** Strategy-minded warriors. **FROM:** Blizzard Entertainment; 714/955-1380, www.blizzard.com; \$45.



Links LS

★★★★½

WE AT THE GAME HALL OF FAME RARELY HAVE TIME for a round of golf, what with the critical life-or-death decisions we make on a daily basis. So when we need a break, we retreat to the sweet serenity of Links LS.

Links LS's gorgeous graphics make us feel as if we're teeing off into a postcard. The ingenious controls are simple enough to be comprehended in a couple of holes, yet nearly impossible to master even after hours of practice. For the latest version, Access Software digitized Arnold Palmer; you can use his form as your alter ego or play against him as one of four other characters. (Other golfers and courses are available as add-on packs.)

Our favorite part about Links, though, is the way it mirrors the actual game of golf. Both games require a patient, contemplative approach. Use too much force, and the next sound you'll hear is a ball crashing through the treetops. At least with Links LS, you don't have to go hunt for it.

WHY IT'S COOL: Eye-popping realism, from the graphics to the frustration of a flubbed putt. **WHO IT'S FOR:** Duffers upset that their local course doesn't let them play after dark. **FROM:** Access Software; 801/736-7000, www.accesssoftware.com; \$50.



Next Year's Hall Hopefuls

Yes, 1998 was a great year for Macintosh games, and it seems that in 1999 the hits will just keep on coming.

If you couldn't get enough of Civilization II, then you'll look forward to Microsoft's Age of Empires, due in early 1999. Build your civilization up from the early days in mud huts and conquer the world with your military, enslave it with economic superiority, or dazzle it with your technological advances. A game about total conquest from the folks at Microsoft? We're shocked!

Even as Bungie Software accepts this year's trophy for Myth: The Fallen Lords, the company is hard at work on a sequel, Myth II: Soulblighter, which should arrive just in time for the holidays. Myth II promises more tactical combat action and features more detailed maps, indoor combat, map-creation tools, and (thankfully) a simplified interface. In 1999, Bungie plans on staking out some new ground with Oni, a third-person game that fuses martial-arts fighting with gunplay.

Fans of A-10 Attack know that when it comes to flight simulators, Parsoft means business. Fighter Squadron: The Screamin' Demons over Europe simulates air combat over Europe during World War II. Players can fly a number of American, British, and German planes, from Mustangs to Messerschmitts.

Parsoft will release the Windows PC version (to be published by Activision) near the end of 1998 and follow up with a Mac version.

Multiple Hall of Fame inductee Blizzard Entertainment has promised follow-up releases to both Diablo and Starcraft. Diablo II and the Starcraft: Brood War expansion pack are also both expected in 1999.



A Soulblighter dwarf (above) and warrior (below left).



A Screamin' Demon in flight.



ENTERTAINING AND INFORMATIVE, THESE CD-ROMS ARE GUARANTEED TO PLEASE

10 Delightful Discs

by Christopher Breen

PERHAPS YOU STARTED LIFE AS AN ADROIT PRESENT-SHAKER. With a single heft, you could judge whether a festively wrapped package contained a model, a book, or—best of all—a toy that saner minds have since banned as unsafe. Over the years these powers haven't diminished a single whit, but today there's a new challenge: the compact disc.

Sure, even the weakest present-shaker can identify a CD's jewel case, regardless of how many layers of holiday wrapping paper adorn it. The real trick is trying to figure out what's inside. It could be an audio CD, but it could also be a CD-ROM containing anything from an encyclopedia to a virtual planetarium to an art studio for the kids. Regrettably—from the ace present-shaker's perspective, anyway—it's now possible to give a gift whose identity remains hidden until the wrapper is removed.

Now you know how to disguise the perfect gift. The real question is, which disc should you give? We can help there as well. Join us as we survey the best of the best in *Macworld's* holiday list of ten great gift CD-ROMs.

JUNIOR ART

Kid Pix Studio Deluxe



FAILING TO INCLUDE KID PIX IN A LIST OF GREAT CD-ROMS would be nothing short of criminal. Not only has Brøderbund sold—in one form or another—a jillion copies of this program, but it's still one of the most entertaining and useful tools available for those whose art gallery of choice is the one on the family fridge.

Kid Pix Studio Deluxe, at its most basic, is a painting program for kids. It features all the tools you'd expect in a painting application—pencil, brush, eraser, fill, line, eyedropper, and text. Beyond these basics, Kid Pix goes the extra mile and tosses in a wacky variety of brush effects, a multitude of colorful backgrounds, and a gallery of stamps.

Kid Pix Studio Deluxe also allows your kids to produce multimedia slide shows, complete with pictures, sounds, and transitions. For instance, it lets them stage and record a puppet show with the program's cast of characters. Should your child need a little help in the guise of prerendered images or sounds, the CD-ROM has them in spades—clip art, background patterns, sounds, and stamps abound.

If you have a kid, a Mac, and 30 bucks to spare, you should also have Kid Pix Studio Deluxe.

Brøderbund; 415/382-4400, www.broderbund.com; \$30.



With the help of the Kid Pix stamp tool, even nonkids can turn out artwork worthy of the family fridge.

COOKING

The Complete MasterCook Suite



BULK WINS OUT OVER BEAUTY IN THE COOKING CATEGORY. Although Brøderbund's Williams-Sonoma Guide to Good Cooking CD-ROM sports a superior interface and is clearly the most attractive of the electronic cooking guides, Sierra On-Line's The Complete MasterCook Suite includes far more recipes. Plus, it allows you to enter your own culinary creations into the program's recipe database. The Suite includes three cookbooks—MasterCook Deluxe, which includes 3,000 classic American recipes; Cooking Light, offering 1,450 low-calorie meals; and Graham Kerr's Swiftly Seasoned, with 140 recipes for low-fat meals that can be prepared in under 20 minutes. To give you an idea of the scope of this collection, we were able to find 11 recipes that included—ugh!—lima beans. To locate the recipes that include this loathsome legume, we used the program's search engine to filter recipes by ingredient. You can also filter by food category, recipe name, preparation time, cost, and nutritional information. In addition to a slew of recipes, The Complete MasterCook Suite includes video tips for performing common kitchen tasks such as beating an egg and grilling vegetables.

Those who have a feel for food and care more for content than presentation will find The Complete MasterCook Suite to be quite a tasty treat.

Sierra On-Line; 425/649-9800, www.sierra.com; \$50.

RedShift 3



IF YOU'VE EVER GAZED INTO THE NIGHT SKY AND PROUDLY proclaimed, "That's the North Star!" only to be told that the bright object you're pointing to is Sirius and you're actually facing southwest, then RedShift 3 is for you. Even those who can differentiate between Cassiopeia and Cepheus will find a lot to like in this CD-ROM. Built for amateur and advanced astronomers alike, RedShift 3 correctly displays the configuration of the heavens as seen from numerous locations around our solar system, at any time, during any day, from January 1, 4713 B.C. to A.D. December 31, 9999. If that many years is too much to fathom and you just want to know what's happening in the skies during the next 12 months, you can create a Sky Diary that lists astronomical events such as eclipses, phases of the Moon, and meteor showers.

RedShift 3 offers more than 50 astronomical tours: from the birth of the universe to the creation of our solar system's planets to the invention of spaceflight. And if a new celestial body—a new comet, for example—hits the headlines, you can download that information from the RedShift Web site and update your copy of RedShift 3 to include the latest news. RedShift 3 is, in more ways than one, a stellar achievement.

Piranha Interactive; 602/491-0500, www.redshift3.com; \$50.

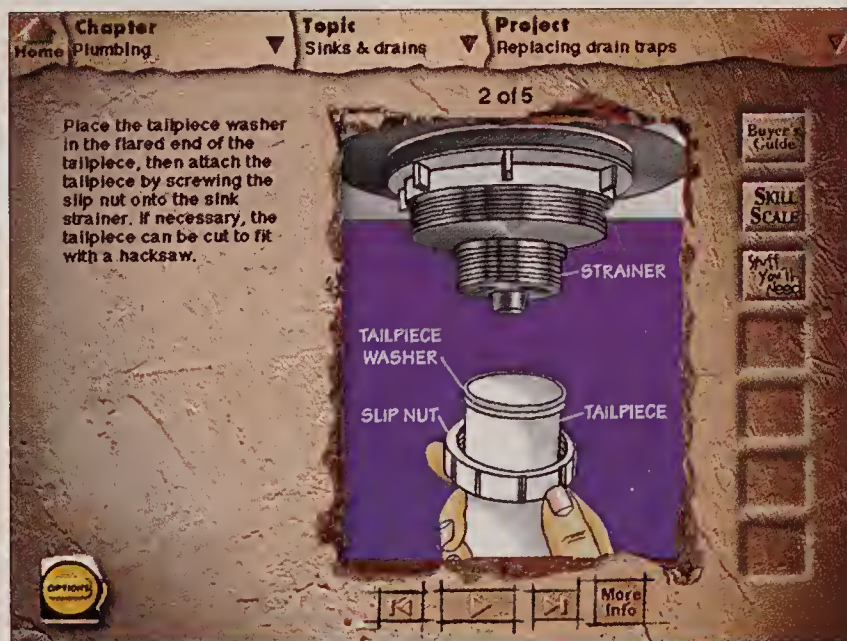
Home Improvement 1-2-3



IF YOU THINK CALLING APPLE TECH SUPPORT IS EXPENSIVE, just wait until you have to bring in a plumber on December 25 to replace the fruitcake-choked trap beneath your kitchen sink. After paying quadruple overtime for this service, you may kick yourself for not having ponied up a mere \$30 for Multimedia 2000's Home Improvement 1-2-3. Despite being splattered with gratuitous references to cosponsor Home Depot, Home Improvement 1-2-3 is the best electronic home-repair reference you can buy. Unlike other home-repair CD-ROMs, Home Improvement 1-2-3 doesn't presume you're a trained handyerson. As a result, its instructions for plumbing, woodworking, electrical, and painting projects are straightforward. The projects range from relatively simple jobs such as installing a light switch to more-demanding tasks such as replacing a toilet.

Each project is presented as a series of steps, and if you like, you can have the instructions read to you—which will be particularly helpful when your head is stuck through that large hole in your ceiling. Each project also includes a list of required materials and tools as well as a Skill Level guide that indicates how long it will take people with different aptitudes to complete a job. Home Improvement 1-2-3 is a very handy CD-ROM indeed.

Multimedia 2000; 206/622-5530, www.m-2k.com; \$30.



Even if you're all thumbs, Home Improvement 1-2-3 will make you handier about the house.

A Passion for Art



CORBIS PUBLISHING HAS A PASSION FOR BEAUTIFULLY REALIZED CD-ROMs—the company's Critical Mass, Leonardo da Vinci, FDR, and Volcanoes: Life on the Edge are all outstanding packages. But A Passion for Art does them all one better. This 1995 CD-ROM explores the private art collection of Dr. Albert Barnes—a wealthy American who, during the 1920s, scoured Europe for the works of such renowned postimpressionist painters as Renoir, Cézanne, Picasso, and Matisse. Because the Barnes Foundation—Dr. Barnes's home for all of his acquired art—was open to the public for only a few years, many of the paintings in the collection are unknown to casual art enthusiasts.



Even connoisseurs will be impressed by Dr. Barnes's collection of postimpressionist paintings in A Passion for Art.

A Passion for Art presents the artwork in a variety of ways. You can choose to take a guided tour, with narration provided by some of today's art experts. If you're the kind who likes to stroll through galleries with no guidance, you can visit each room of the Barnes Foundation and click on the paintings to take a closer look as well as access information about the work and the artist. The paintings are nicely reproduced, and you're provided with a Super-Zoom function that allows you to carefully examine each and every brushstroke.

Those passionate for—or simply interested in—the art of this period should be sure to add this CD-ROM to their own private collection.

Corbis Publishing (sold through Hoffman & Associates); 888/464-5652; \$30.

Encyclopædia Britannica CD: 1998 Standard Edition



THE ENCYCLOPÆDIA BRITANNICA CD HIGHLIGHTS ONE OF the strengths of CD-ROM technology—the ability to store massive amounts of information on a single disc. Unlike Microsoft's Encarta and the 1999 Grolier Multimedia Encyclopedia (see *Reviews*, in this issue), the Encyclopædia Britannica is not a multimedia marvel. It eschews QuickTime movies and an abundance of digital images in favor of text that digs more deeply into a subject. Although the 1998 Standard Edition carries about 4,000 graphics and illustrations, the disc offers a comprehensive resource rather than one that's merely attractive.

The 1998 Standard Edition makes improvements over previous years' editions. Although a Web browser is still required in order to use the Encyclopædia Britannica CD, the current edition's interface is a big improvement on the previous edition (which essentially looked like an ugly Web page). The CD-ROM still features an abundance of Web links (15,000 of 'em), but they no longer look like the final exam in a basic Web-authoring tutorial. In addition to an expanded set of Web links, 789 new or revised articles appear in the latest edition and 5,000 articles appear on the CD-ROM that aren't found in the current, multivolume—and much more expensive—print version of the *Encyclopædia*.

Dry though it may occasionally be, the Encyclopædia Britannica CD will be a welcome addition to your reference library.

Encyclopædia Britannica; 800/747-8503, www.eb.com; \$85.

CD-ROM's Death Knell?

As new technologies and markets develop and flower, others fall by the wayside. Such appears to be the case for the once mighty CD-ROM reference disc. In a sign of things to come, Microsoft and Corbis Publishing have halted development on future CD-ROM reference products.

The reason they give is the bottom line. As marvelous as all these discs are, most have a necessarily narrow focus—wine, past presidents, and early twentieth-century European art, for example. Sadly, CD-ROM reference discs simply don't make enough money to justify their production costs.

Furthermore, with the growth of the Internet and improved modem speeds, greater numbers of computer users are turning to the Web for reference information. Although few Web sites can match the quality of the CD-ROM multimedia experience, the Web has this obvious advantage: information can be updated within a matter of minutes. Many recent CD-ROM reference discs now include an online component to keep information reasonably up-to-date, but online updates still can't match the immediacy of a Web site.

This doesn't spell the end for all reference CD-ROMs. Reference materials such as encyclopedias, atlases, dictionaries, magazine archives—in short, any large clump of data that in print form would consume a midsize bookshelf—is still a prime candidate for electronic storage. With DVD shortly to assume the mantle of Master of High-Capacity Media (see "DVD: Now Playing," November 1998), future reference discs should become even more comprehensive and interactive.

Logical Journey of the Zoombinis Deluxe



PITY THE POOR CHILD WHO UNWRAPS A COPY OF LOGICAL Journey of the Zoombinis in a house where grown-ups run wild. There the nine-year-old or older tyke sits, happily solving one of Zoombinis' 48 puzzles, when a curious adult happens by, glances at the Mac monitor, scoots the kid aside, saying, "Let me try that for a second," and never relinquishes the mouse.

In the world of this kids' CD, you control a collection of Zoombinis—jelly bean–like characters who have recently escaped from their conquered homeland. Your job is to lead the Zoombinis to a new Promised Land by solving 48 logic puzzles along the way. Don't tell the kids, but these puzzles work those mental muscles responsible for pattern recognition, sorting, mapping, grouping, and data sequencing.

Thankfully, the puzzles are engaging enough that children may not realize they're learning as they play. For example, who would suspect there was any educational value in determining which combination of five pizza toppings will satisfy the Tree Troll who bars your path?

Unlike many other "edutainment" CD-ROMs, Logical Journey of the Zoombinis is replayable. Don't toss that disc after your first time through!—the answers to each of the puzzles change whenever you march a new group of Zoombinis down the path. Add this to the game's enticing play and brain-bending puzzles, and you've got a disc sure to please kids and adults alike.

Brøderbund; 415/382-4400, www.broderbund.com; \$30.



The Zoombinis must create the perfect pizza for this picky troll.

Sunset Western Garden CD-ROM



WHETHER YOUR THUMB IS BROWN OR GREEN, THE SUNSET Western Garden CD-ROM is likely to prove a boon to your botanic buddies. Based on a veritable bible of the gardening world, Sunset's *Western Garden Book*, the Western Garden CD-ROM contains descriptions of more than 6,000 species of plants found in the western United States. No need to page through each of these species, however. By entering your zip code in the Encyclopedia section's Climate Zone dialog box, you can view only those plants that grow in your area. Another way to filter your search is through the Plant Selector section, where you search for plants, based on plant type, growing season, sun and water requirements, and climate zone.

Each Plant Description window carries a zoomable picture of the plant, a text box that provides details about the plant and hints for its care, and an audio clip with the pronunciation of the plant's botanical name. From within the Plant Description windows, you can add individual plants to your personal plant catalog.

If your gift-getter lives somewhere east of the Rockies (or way north or south), consider Multimedia 2000's *Better Homes and Gardens Complete Guide to Gardening* (206/622-5530, www.m-2k.com; \$20). Although not as complete as the Sunset CD-ROM, it includes plants that grow in regions other than the West.

Sunset Publishing; 650/321-3600, www.sunsetmagazine.com; \$50.

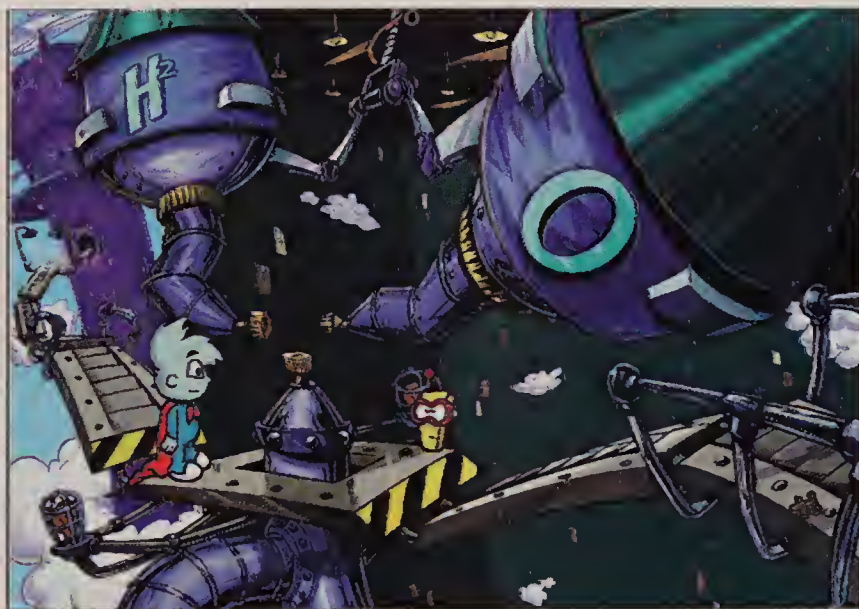
Pajama Sam 2: Thunder and Lightning Aren't So Frightening



PAJAMA SAM, THE WORLD'S ONLY SUPERHERO LEGALLY ENTITLED to order off the children's menu, is back with a new adventure. This time Sam journeys to the headquarters of World Wide Weather, the conglomerate responsible for producing the thunder and lightning that gives our caped crusader the heebie-jeebies. Just as the diminutive dynamo learns to be comfortable with atmospheric events, he accidentally pushes the Big Red Button that throws the world's climate into a tizzy—hurricanes in Toledo, snow in Hawaii, and most disturbing of all, *sunshine in Seattle!* To put things right, you must take the role of Pajama Sam and track down the missing pieces of the company's weather machine.

As with Humongous Entertainment's popular *Freddi Fish* series, Pajama Sam's world is filled with enough clickable, animated objects to keep a young child entertained for hours. And should your tot tire of hunting and gathering clues, a simple, Parcheesi-like board game is available at all times. Kids who like adventure games will love Pajama Sam 2. Those who exceed the game's recommended age range, 3 to 8, will also be charmed.

Humongous Entertainment; 425/485-1212, www.humongous.com; \$30.



The weather's broken and only your child and Pajama Sam can bring about sunnier times.

The Complete National Geographic



THE COMPLETE NATIONAL GEOGRAPHIC IS A CD-ROM PACKAGE that's both gloriously overwhelming and frustrating. Gloriously overwhelming because every page of every issue from late 1888 to December 1997—including advertisements—was scanned into this 31-disc collection. Frustrating because (a) the material looks fine on a monitor but prints poorly due to the low resolution of the scans, and (b) a 31-disc enterprise necessitates a lot of disc swapping.

Then why is *The Complete National Geographic* one of our top picks? Because you just can't get this material anywhere else. Despite its rough edges, this collection is an awesome testament—good and bad—to the natural and human experience of the past



No use crabbing—that black line appears between every pair of *The Complete National Geographic's* history-rich pages.

110 years. You won't find rich multimedia elements here, but the search engine is reasonably fast and efficient. It lets you filter your search by issue and range of dates, and you can bookmark favorite pages. Additionally, the program's Home page provides a Web button that launches your browser and takes you directly to the National Geographic Web site—another marvelous resource.

If you're wondering what you've missed during the last century—or just want to clear your basement of old magazines—*The Complete National Geographic* is a natural.

Mindscape; 415/895-2000, www.mindscape.com; \$180. **m**

Contributing Editor Christopher Breen's enthusiasm for consumer CD-ROMs is matched only by his disdain for lima beans.



GOOD TIDINGS FOR MAC GIFT GIVERS

Supreme

AS YOU'RE DASHING THROUGH the snow in search of the perfect stocking stuffer, consider picking up a copy of *Macworld's Holiday Gift Guide*. Because if you're having trouble finding that little something for that special someone, you need look no further. *Macworld* has taken the hard work out of this year's shopping frenzy by finding great gift ideas for the Mac fans on your list. So before you hang your stockings by the chimney with care, check out these cool new Mac products.

SOOTHING SOUNDS

EarSaver



IF THE INCESSANT DRONE OF YOUR computer's fan or your chatty coworker in the next cubicle sometimes puts you over the edge, EarSaver 1.0 (\$29.95 list price), from Synthetic Productions (201/568-8282, www.earsaver.com), may be just the solution for you. EarSaver plays a soothing blend of synthesized music and natural sounds through your computer's speakers or headphones. EarSaver uses a measly 1.6MB of RAM and hardly any disk space, and it's even compatible with older,



It's almost as soothing as the sound of silence.

68030-based Macs. Also, unlike some audio programs, EarSaver almost always keeps on playing smoothly, even with virtual memory activated. Along with the EarSaver application, you get four hours of digital tracks that run the gamut from chirping crickets to free-form new-age compositions.

Although EarSaver doesn't promise to completely do away with annoying sounds, it did make one of my kids stop screaming, if only for a few minutes.—FRANKLIN N. TESSLER

This *mercado* is always *abierto*.

Spanish for the Real World



¡ESPAÑOL PARA TODOS!

SET IN A TRANS-MEXICO CAR RALLY, Spanish for the Real World (\$30 company's estimated price), from Knowledge Adventure (310/793-0600, www.knowledgeadventure.com), takes players on a fun-filled road trip through the Spanish language. Along the way, virtual competitors challenge you to puzzle-solving games. Complete each puzzle and you zoom ahead to the next *ciudad* along your route, moving on to another game that builds on your grammar, vocabulary, or verb-conjugation skills. Make it to the *meta* (finish line) in first place and you earn a slot in the next rally; vocabulary and logic skills get increasingly difficult with each rally. Although primarily geared toward high-school-age players, older students and parents will find the puzzles challenging, too; if you get stuck, a dictionary of phrases helps out. Unlike many competing products, the Mac version of Spanish for the Real World (and its French equivalent) offers the same features as its PC sibling, including the ability to record your voice to compare your pronunciation with that of the characters in the story. For first-year *estudiantes*—or anyone looking to polish his or her *Español*—there's no better holiday gift.—ANITA EPLER



Stocking Stuffers

StickerPix



HOMEMADE ADHESIVES

IF YOUR KIDS SPEND THEIR HARD-earned allowance on those kiosks that spit out little photo stickers with goofy backgrounds, you'll understand the allure of StickerPix (\$40 list price), from XLsoft (714/453-2781, www.xlsoft.com). It's simple fun: you import a photo you've scanned or downloaded from a digital camera, pick one of 250 or so backgrounds, add extra text or little images, and use an ink-jet printer to print your creation onto sticker paper. You can print any size stickers by choosing from templates or creating your own, so you're not limited to just teeny



Seal it with a sticker.

photographs. StickerPix's colorful interface sports big, friendly buttons and easy-to-understand tabs that even parents will know how to use. But you don't need kids to have fun with StickerPix—I've littered office, home, and neighborhood with little adhesive pictures of myself. Just make sure you have lots of free disk space first—StickerPix's fun background files clog up about 22MB.
—BROOKE C. WHEELER

This CD will show you that roses aren't just red.

Growing Good Roses



GET A GREEN THUMB

IF HALF THE FUN OF GROWING ROSES is tending to their every need, surely the other half is plotting your next purchase. Growing Good Roses (\$24.95 list price), from Multimedia 2000 (206/622-5530, www.m-2k.com), will help you do both. Featuring homespun wisdom and guidance from rose expert Rayford Clayton Reddell, this CD-ROM is packed with helpful videos, photos, and articles. The illustrated Gardener's Notebook offers tips on everything from buying and planting to cutting and exhibiting, and 25 videos walk you through the trickier aspects of rose keeping. You can view the 300-plus photos by rose name, color, or class. Or sit back and tour famous gardens, such as the Roseaie de l'Haye in Paris or Reddell's own Garden Valley Ranch. More information on each variety would be helpful, as would photos that offer a view of the entire bush rather than just individual blooms. And the videos are a bit too focused on modern roses—if you want to learn how to prune old roses, for example, you're out of luck. Experts may want to stick with books that offer more detail and fewer generalizations, but budding rosarians will find Growing Good Roses a great resource.—LINDA COMER



The X-Files Game



JOIN THE CONSPIRACY

IMAGINE YOURSELF RUNNING ALONG-side agents Fox Mulder and Dana Scully, caught in the web of creepy conspiracies that make *The X-Files* a smash TV hit. The X-Files Game (\$55 company's estimated price), from Fox Interactive (310/369-7000, www.foxinteractive.com), puts you right into a never-before-seen *X-Files* adventure as Craig Willmore, an FBI agent.

What's impressive about this game is its incredible use of QuickTime video. The video's high-quality production seems to match that of the show itself—the dimly lit world on your com-



The truth is out there—but can you uncover it?

puter screen is consistent with the show's dark and eerie ambience. And most of the show's main players make appearances as well, including agents Mulder and Scully; their boss, Skinner; the wackily enigmatic Lone Gunmen; and the evilly enigmatic Cigarette Smoking Man. The result is probably the most authentic movie- or TV-spin-off game I've ever played.

What's not impressive is the game play itself. Too many times I wanted to fast-forward past tedious sections and get back to the action. *X-Files* fans will wish this were less of an adventure game and more of an interactive movie. Still, the attention to detail makes *The X-Files Game* an intriguing gift for the X-phile on your holiday gift list.—JASON SNELL

Music Ace



IT WON'T TURN YOU INTO A BACH OR a Beethoven—or even a Barry Manilow, for that matter—but Music Ace (\$49.95 list price), from Harmonic Vision (847/467-2395, www.harmonicvision.com), offers an excellent introduction to basic music concepts for musicians of all ages.

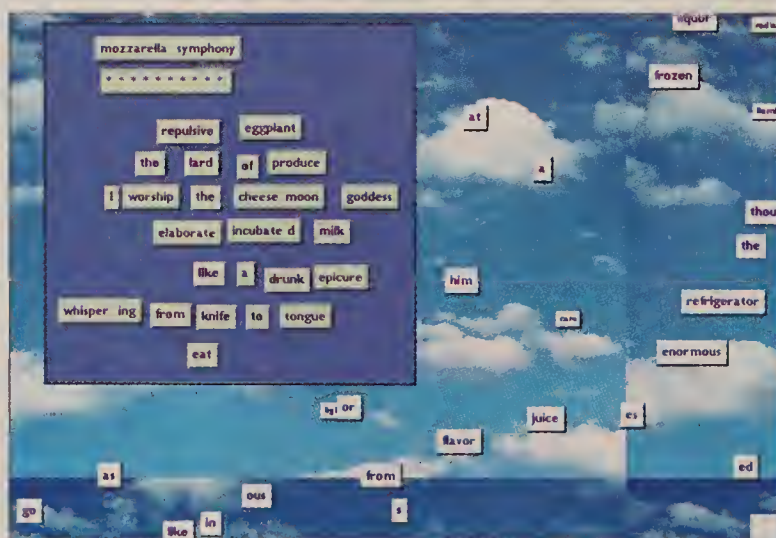
A cartoon conductor named Maestro Max leads you through 24 lessons that teach you about note reading, the piano keyboard, major scales, key signatures, and more. You also learn to develop your listening skills by comparing the sounds of different notes. For each lesson, there's a cor-



Maestro Max teaches more than "Chopsticks."

responding game that helps you develop the skills you've just learned. The program also includes a Doodle Pad that lets you compose your own music or play back songs stored on the CD-ROM. You can even add your own MIDI keyboard for a more realistic playing experience; otherwise, you can use your mouse to hit the keys on an on-screen piano. The material is basic—it overlooks musical elements such as rhythm and form—but Music Ace still provides great unintimidating instruction for beginners of all ages.—STEPHEN BEALE

Fridge graffiti goes digital.



ElectroMagnetic Poetry Kit



A FRIDGE FAVORITE

THAT UBIQUITOUS ICON OF URBAN Gen X kitchen life makes its way into the computer arena. Cleverly christened ElectroMagnetic Poetry Kit (\$29.95 list price), this CD from Magnetic Poetry (612/338-6399, www.magneticpoetry.com) works on much the same principle as the original flexible refrigerator adornments, with some aesthetic twists: you can change the font, color, and thickness of your tiles, as well as the color of your work area and the background graphic—at least in theory. On three different Macs I used to test the program, ElectroMagnetic Poetry suffered from some serious interface glitches, including major window-redraw problems, backgrounds not importing properly, and the occasional system crash when reconfiguring style options. Still, the basic premise is entertaining: you choose a word list from eight possibilities—including four foreign languages—and then add handfuls of other words from topics such as Eros, Food, Sports, and other pastimes. As word-tiles float by, you click to add them to your emerging poem; a double-click releases unneeded tiles. The spartan manual (both hard copy and HTML) is remarkably complete, despite some confusing passages and amateurish production values. Like its fridge-based predecessor, ElectroMagnetic Poetry offers a silly way to play with your brain and decorate your desktop, but it could use a lot more polish; in its current state, it feels like hastily ported shareware.—ANITA EPLER

MyTypeArtist



SAY IT WITH STYLE

ADD SOME FANCY TO YOUR FONTS. For the artistically challenged, MyTypeArtist (\$19.95 company's estimated price), from MySoftware Company (650/473-3600, www.mysoftware.com), offers an inexpensive way to create quick letter graphics for party invites and simple greetings.

With MyTypeArtist's more than 1,000 themes and typefaces to apply to any word or phrase, you can easily create original stationery and greeting cards for any time of year. Simply type in the text, pick a style from the software's graphics library, and input the style. Thankfully, MyTypeArtist is compatible with most popular word-processing and graphics programs, including Microsoft Word, Adobe Photoshop, and QuarkXPress.



Create your own holiday cheer.

For those looking to send some holiday cheer, MyTypeArtist offers several red-and-green-bedecked font styles, including lithe green letters with little red bows. Of course, there are also elegantly shaded and sculpted characters, groovy textured letters, and flowery script.

Although MyTypeArtist is great for making stationery and simple announcements, you shouldn't consider this software as a solution for business letterhead or stylish Web headers. With MyTypeArtist, you can't alter multiple lines of text at once, you're limited to 40 characters per phrase, and you may miss traditional commands such as bold and italics. But if you're looking to add a little font fun, MyTypeArtist will bring out the Picasso in you.—LAURA LINDHE

The D Show ^{1/2}

HeadRush

IF YOU'RE WONDERING HOW TO TOP off your next holiday gala, fret no longer. Gather 'round the warm glow of your Mac for a few hearty chuckles with this year's quiz games.

HeadRush (\$29.95 list price) is the latest high-strung bundle of hilarity from the Berkeley Systems folks (Sierra On-Line; 425/649-9800, www.sierra.com) who birthed You Don't Know Jack. The pedigree shows in the game's hyperactive style, and the host still sounds like he's got a weasel trapped in his trousers. Be sure not



Fry your brain with more nonsense trivia.

to send the kids off to bed too early, though, as HeadRush aims squarely at the young nippers. Most of the party attendees in tails and cocktail dresses will score on the science and language questions, but the pop-culture references and trivia will have your guests casting about for someone wearing baggy jeans and a beeper.

On the other hand, The D Show (\$39.99 list price), from Disney Interactive (800/228-0988, www.disneyinteractive.com), may look like a surefire winner for the diaper set, but this disc goes better with a well-mixed dry martini than with a sticky glass of ginger ale. Set to familiar late-1950s orchestral pop, The D Show has its share of *Little Mermaid* questions that are sure to set the tykes a-squealing. But most of the trivia is heavy-duty insider stuff, such as the names of voice artists and musical composers, identities of obscure characters from Disney movies, and tidbits about Disney amusement parks around the world.

So swing into the new year with a carefree heart. Even if Uncle Charlie gets too pickled to plunk out "Auld Lang Syne" on the family upright, you'll have the evening's entertainment well in hand.—CAMERON CROTTY

Elmo's Reading: Preschool and Kindergarten



ELMO, *SESAME STREET*'S FURRY RED monster, will tickle you and your little one pink in the two-CD set *Elmo's Reading: Preschool and Kindergarten* (\$34.95 list price), from The Learning Company (617/494-1200, www.learningco.com). In the first CD, *Reading Basics*, your preschooler can choose from six different activities, including rhyming with Zoe, helping Cookie Monster spell, and matching letters to word parts with SuperGrover. The positive feedback and cute animations make each activity loads of fun.

For the youngster who still can't get enough of li'l Elmo, the second CD includes more games and more-advanced activities. Follow Elmo through the looking glass and into an entertaining expedition in *Elmo's Reading Adventure*. In this mystical *Sesame Street* world, your little tyke is plunked into the *Sesame Street* versions of familiar Alice in Wonderland scenes. Who can pass up a grouch tea party hosted by Oscar himself? The bright colors and simple drawings are inviting, but the pictures don't sport as many clickable animations as those in other products. However, when it comes to playability and appeal, both of these CDs will bring sunny days.—WENDY SHARP



Reading is the top act in this stand-up routine.

Wipe Out



MAYBE YOU'RE ONE OF THOSE PEOPLE who always neatly puts CDs or DVDs—music, multimedia, application, or otherwise—back in their cases. But for the rest of us who are just too darn *busy* (lazy?) to do so, there's *Wipe Out* (\$15 list price) to repair the damage we inflict. I've given this stuff to well-traveled friends whose CDs get road damage; friends with claw-bearing cats; and friends who are just plain careless slobs like me who stack naked CDs on their desk, pile them on the floor near the stereo, and scatter them in the car like gum wrappers. Esprit Devel-



KEVIN CANDLAND

Say bye-bye to trashed CDs.

opment's (908/284-0426, www.cdrepair.com) little bottle of goop clears up even big, scary scratches, such as the one that appeared on my *Blur Modern Life Is Rubbish* CD after a bookcase was dragged over it repeatedly (don't ask). As

long as the damage is in the plastic layer and doesn't reach the inner layer, the Wipe Out fluid and its little cloth can buff it away. Deep scratches take a few repeated applications and extra polishing, but CDs end up essentially as good as new. Of course, the best damage protection is prevention, but tell that to somebody who just inadvertently rolled a desk chair over her system-backup CD-R.

—BROOKE C. WHEELER 



IF YOU'RE TIRED OF LAME, UNIMAGINATIVE GIFTS, YOU'VE COME TO THE RIGHT PLACE

What, Fruitcake Again?

by Andy Ihnatko

THE FOLLOWING LIST OF UNIQUE AND UNUSUAL MAC-related gift items was assembled with one goal in mind: to protect you from turning into the very thing you dreaded as a kid—the relative who gave you the same boring, lousy gift every year.

Don't let yourself end up like Uncle Socks and Auntie Sweater. Instead, remind your beloved friends and relatives of the uncle who surprised them with that autographed photo of Bobby Orr. Believe me, you'll be glad you did. Because it shows that you care. Because it indicates the depth of your friendship. Because you're moving in the spring, and there's no way you're loading up 4 computer systems and 20 cartons of books all by yourself.

Give Them Stuff to Read

Sometimes people have to go to the beach and don't want to expose their \$4,000 PowerBook G3 to sand and sea. One thing missing in the computer world is a satisfying, slimy, and—yes—*bitchy* (in the Jackie Collins sense) tell-all book.

We've got a couple of good stabs at it, though. *On the Firing Line: My 500 Days at Apple* (\$25; HarperBusiness, 1998) is Gil Amelio's personal form of therapy, in which he works out the demons of his hitch as CEO, but it comes across as rather like the sections of George Takei's autobiography in which he talks about William Shatner. Too much personal vitriol without the embarrassing details to back it all up.

Much better, though still short of the ideal, is *Barbarians Led by Bill Gates: Microsoft from the Inside*, by Jennifer Edstrom and Marlin Eller (\$23; Henry Holt & Company, 1998). One author is the daughter of a principal in Microsoft's PR firm and the other is a longtime employee, which adds up to lots of juicy tidbits.

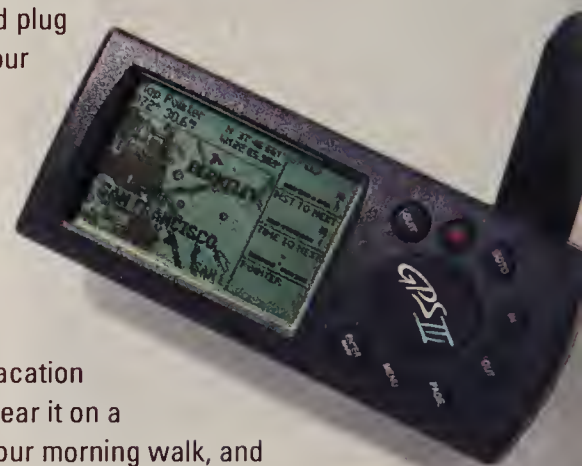
Those uninterested in dirty laundry might prefer the coffee-table approach of *Appledesign: The Work of the Apple Industrial Design Group*, by Paul Kunkel and Rick English (\$45; Watson-Guptill Publications, 1997). This lavish book depicts the wild and wacky world of Apple product design.

Help Them Find Themselves

We're finally at the point where Global Positioning System (GPS) devices are small, inexpensive, and simple enough that they've ceased being the exclusive totems of geeks. A GPS receiver is the perfect gift item, as it's something (a) you'd never buy for yourself and (b) whose fundamental ginchiness doesn't become apparent until you begin to integrate it into your life.

Put it in the car and plug in the coordinates of your destination, and it'll graphically point the way as you go. Pop it into a bracket on your bike, and it'll report your speed and the distance you've traveled. During your vacation in Boulder, Colorado, wear it on a lanyard as you go for your morning walk, and when you collapse half a block later, you can convince yourself that it's because of the 6,297-foot altitude.

Garmin's GPS III (\$299; www.garmin.com), which resembles a slightly oversize black electronic Twinkie, is among the best of the lot. It's got a built-in road atlas that's surprisingly detailed. Garmin doesn't make a Mac interface cable for the GPS III, but Global Mapping Systems (www.gpsy.com) will sell you one for \$40, along with GPSSy, the company's stunning \$50 Macintosh GPS software. GPSSy lets your Mac collect GPS data and can mark your current location on practically any map source, such as maps from your Street Atlas USA CD-ROM or even a spy-satellite photo of the area.



Bring Out Their Creative Side

You know, the best gifts are the ones you make yourself. So spend the afternoon painting up a loved one's Power Mac G3 tower so it resembles something out of *Babylon 5*.

Spray-painting a Mac case a different color isn't exactly a new idea, but Rust-Oleum has come out with a new and wonderful line of paints, called American Accents (\$3 to \$12, available at your local hardware store), that throw on amazingly detailed patterns in one coat, from beaten copper to a tight leopard skin to the distinctively deep mottled patterns signifying the arrival of Vorlon Ambassador Kosh and his frustratingly vague prophecies of doom.



Make Them Think Different

You've seen them in bus stops, in your house of worship, and blown up to enormous size on the sides of buildings: those snappy posters that attempt to piggyback our humble little computers onto the fame of personages both legendary (Bob Dylan) and, well, those who are sentimental favorites of the ad people (Joan Baez). You certainly know folks who'd love one or two for their home and office, but you're long past the age when you can just tear bus ads out of their frames.

Well, just call AppleDesigns (800/825-2145), press 2, and ask for your own "Think Different" posters. (By the time you read this, the AppleDesigns catalog should also be online at www.appledesigns.com.) You can buy all of Series Three (Lucy and Desi, Jim Henson, Miles Davis, and Ansel Adams) for \$10. And they're perfect for office gift-giving; they come only in sets, so you'll have one poster as a legitimate gift, one for yourself, and two more to save for when coworkers you've bought nothing for surprise you with presents.

The AppleDesign catalog offers all kinds of other Apple-logoed gifts, including a \$40 "Think Different" watch, which runs backward. (At press time, they were sold out at Apple but still available from mail-order houses.) Sure it's impractical, but you'll use it anyway because it's just too damned cool; needless to say, that makes it a worthy heir to the original 128K Mac and the Newton MessagePad 100.



Transport Them to the 1980s

We're now in that wonderful part of our social history in which an entire generation exists whose cultural touchstones aren't movies or music or cars but rather the video games they used to play as kids. And so today, there can be no more thoughtful gift for anyone between the ages of 25 and 35 than a copy of MacMAME.

MacMAME (available free from www.macmame.org) is an application that emulates the hardware of all the classic coin-op arcade machines. With MacMAME and one of the more than 500 downloadable ROMs of the great games of yore, your Mac reproduces the experience in such detail that you'll swear you can hear the sound of the Thompson Twins playing in the background.

Present your loving wife with a Zip disk of all the games you used to play together while courting in dingy suburban bowling alleys. "Got the humanoid?" you will ask, softly. "Got . . . the intruder," she will reply, misty-eyed, offering a tender kiss on the cheek.

Help Them Find Their Files

For the practical-minded on your list, Action Files, from Power On Software (\$50; www.actionutilities.com), is the gift that keeps on giving. The people you give it to will love what it does for their Mac, and you'll look like a major ninja stud-monkey power user by buying it for them.

Action Files turbocharges the Mac's Open and Save dialog boxes, adding a menu bar that offers instant access to recently used volumes, folders, and files, and allowing you to perform several Finder actions, such as emptying the Trash and doing a Get Info, from within the dialog box. It also makes the listing wide enough to read whole file names and displays modification dates and the amount of free space left on mounted volumes.

True, Mac OS 8.5 provides similar enhancements—but only in programs modified to support the new Open and Save dialog boxes. That only makes Action Files more desirable: these enhancements are just so great that everyone will want them in *all* of their apps. And that's what Action Files delivers. **m**

Andy Ihnatko, America's 42nd-most-beloved industry personality, has written about Macs and technology for Macworld, MacUser, Yahoo Internet Life, and Playboy. He is the author of Cyber Speak: An Online Dictionary (Random House, 1997).

Give Them Anything Bondi Blue

Yes, such is the runaway popularity of the iMac that the darling little 40-pound device is having its influence all over the industry, with everyone rushing to buy peripherals that are stylistically compatible with that supertrendy plastic bubble on their desk. And though the precise color of the iMac was exhaustively formulated and researched (can we just *admit* that Bondi Blue is nothing more than the color of the sea plastic in the Battleship board game?), there were already plenty of existing consumer items that now match the iMac decor well and make great gifts for a recent iMac convert.

My personal favorite: the small Critter Corral, from Dorskocil (\$17; Box 1246, Arlington, TX 76004). Make no mistake: one day Steve Jobs was at Debby's Pet World, saw this on display, and thought, "Put a big screen and a G3 in that thing, and I could sell a million of 'em!"

Now your cat can share your desktop without ruining the larger scheme. It's also a boon for those of you who still have working Mac Classics: pull out the cushion, sit that sucker in there, and in the minds of the slightly nearsighted you'll go from being the dregs of the office hardware-requisition backlist to that silver-tongued devil who got his IS department to buy him a \$1,299 computer just for its looks.



THE WORLD

Macworld Lab Looks at

19 Flat-Panel Displays

That Could Make Your

Bulky Monitor a Dinosaur



by JULIE POLITO

You may think you're content as you spend every workday staring into the heavy, flickering glass tube that is your display. But your computing experience is about to radically change—the world is going flat. Flat-panel displays, after several years of being oohed and aahed over, are finally finding their way onto desks en masse. Prices are dropping; screen sizes are growing from a wimpy 13 inches to a grand 22; and picture quality is improving, offering readable text and more-recognizable images.

IS FLAT



In the next few years, don't be surprised to see flat panels replace the hulking cathode-ray-tube (CRT) monitors you see all around you. And for good reason: flat panel monitors use less power, are easier on the eyes, and take up about a third of the room of a typical monitor. Many of the models we review are relatively free from early flat-screen weaknesses. But are flat panels truly not just for PowerBooks any more? Macworld Lab tested 19 flat panels to find out.

Photograph by
MARK JOHANN

Macworld
LAB TEST

Overleaf (left to right): the Princeton DPP 500, Apple Studio Display, Samsung SyncMaster 520 TFT, Hitachi PCX-DT3140 (upper right), and Sony CPD-L150.

Small Space Savior

If there's nothing wrong with your current monitor, then it may be hard to imagine why you'd chuck it for a new display. To sum it up: space. A typical flat panel with a 15-inch-diagonal viewing area is about 8 inches deep and 15 inches wide by 15 inches high. For 15 inches on a CRT display, the monitor will be 17 inches deep and 18 inches wide by 18 inches high. The worst part? Moving a 40-pound CRT will break your back, whereas a trim, 12-pound flat panel is no problem—two models we looked at even come with clever carrying handles. In the space on your desk where you're keeping that extra bulk, you could keep a scanner or a printer, or even another monitor. In fact, a flat-panel display makes a perfect partner in a dual-monitor setup.

There's another little plus about flat panels that won't be so obvious at first glance if you are used to a CRT—they're easy on the eyes. Standard CRTs constantly refresh the image you see on the screen, creating a persistent flicker. A flat screen, which uses a different kind of technology called *active matrix*, displays a constant image. No flicker equals less eyestrain. Macworld Lab testers, who have conducted hundreds of tests on displays, said their eyes felt less tired after spending days and days in front of the 20 flat panels we analyzed than they would have with CRTs.

However, the traditional CRT *does* still have lots of things going for it: color fidelity and image quality on the best CRTs are clearly better than on the best flat-panel monitors. CRTs have a much larger *viewing angle*—the larger a monitor's viewing angle, the farther you can move from dead center in front of the screen and still see its contents clearly. Although you can view a CRT from extreme angles, LCD screen contents tend to fade out of view even when you can clearly see the front of the monitor itself. And CRTs are still quite a bit cheaper than similarly sized LCD screens.

Tube-Free Viewing What gives a flat-panel display its trim figure? The same thing that illuminates higher-end notebook screens—active-matrix technology, also known as thin-film-transistor (TFT) technology. The transistors in a TFT monitor essentially replace the heavy tube required for CRT monitors—the larger the monitor, the weightier the tube.

Whereas a CRT is basically made up of an electron gun that shoots electron beams at red, green, and blue phosphors inside a tube, an active-matrix display uses red, green, and blue filters in front of liquid crystals. These crystals allow light from a backlight, made of one or more fluorescent tubes, to pass through when electricity from transistors is applied to them. That's why flat-panel monitors are often referred to as LCDs, or liquid-crystal displays.

Inside an active-matrix LCD panel are several thin layers of filters and liquid crystals. Light pushes through each of the layers

FLAT PANELS COMPARED

Company	Product	Mouse Rating	Company's Estimated Price	Phone	Viewable Area (diagonal, in inches)	Maximum Resolution (in pixels)	Dimensions (height × width × depth, in inches/weight)
EDITORS' CHOICE							
Apple Computer	Studio Display	●●●●½	\$1,299 ^B	408/996-1010	15.0	1,024 × 768	19 × 15.5 × 9.3/12 lb.
Compaq Computer	TFT450	●●	\$949	281/370-0670	14.5	1,024 × 768	15 × 14.3 × 8/12.5 lb.
CTX International	PanoView 745	●●●	\$899	626/839-0500	14.0	1,024 × 768	15 × 15 × 7.3/12 lb.
Eizo Nanao	FlexScan L23	●●●	\$1,249	562/431-5011	13.6	1,024 × 768	14.5 × 14 × 6.5/12.8 lb.
EDITORS' CHOICE							
Hitachi America	PCX-DT3140	●●●●	\$1,399	650/589-8300	14.0	1,024 × 768	12.8 × 14.6 × 7.3/7.3 lb.
Mitsubishi Electronics	LCD40	●●●●½	\$1,099 ^B	714/220-2500	14.0	1,024 × 768	14 × 11.3 × 6.3/10 lb.
of America	LCD50	●●●	\$1,499 ^B	714/220-2500	15.0	1,024 × 768	14.5 × 15 × 6.5/11.5 lb.
NEC Technologies	MultiSync LCD400V	●●●½	\$1,199	630/467-5000	14.0	1,024 × 768	14 × 13 × 6.5/11 lb.
	MultiSync LCD1510V	●●●●½	\$1,299	630/467-5000	15.0	1,024 × 768	17 × 15 × 7.8/14.8 lb.
	MultiSync LCD1510	●●●●½	\$1,599	630/467-5000	14.9	1,024 × 768	17.5 × 15.8 × 8/14.8 lb.
	MultiSync LCD2000 Special Edition	●●●●½	\$5,999	630/467-5000	20.0	1,152 × 870	19 × 19 × 7.5/22 lb.
	MultiSync LCD2010	●●●●½	\$5,999	630/467-5000	20.0	1,280 × 1,024	22.6 × 19 × 8.6/27.8 lb.
Panasonic Computer Peripheral Company	PanaFlat LC50S	●●●●½	\$1,699	201/348-7000	15.0	1,024 × 768	15.3 × 15 × 8/15.5 lb.
Philips Electronics	Brilliance 151AX	●●●●½	\$799 ^B	770/821-2400	15.0	1,024 × 768	16 × 12.8 × 6.5/11.8 lb.
Princeton Graphics Systems	DPP 500	not rated ^C	\$995 ^B	714/751-8405	14.0	1,024 × 768	15 × 14.5 × 10.3/14 lb.
Samsung Electronics America	SyncMaster 320 TFT	●●●●½	\$794	201/229-4000	13.3	1,024 × 768	15.5 × 14 × 8/16.3 lb.
	SyncMaster 520 TFT	●●●●½	\$1,359	201/229-4000	14.9	1,024 × 768	16.3 × 16 × 7/19.3 lb.
Sceptre Technologies	FT15	●●	\$1,199 ^B	626/369-3698	14.5	1,024 × 768	15.5 × 13.3 × 8/12.8 lb.
Sony Electronics	CPD-L150	●●●●½	\$1,599	408/432-1600	15.0	1,024 × 768	14.3 × 15.5 × 6.5/11.5 lb.
ViewSonic	ViewPanel VP150	●●●	\$1,195	909/869-7976	14.9	1,024 × 768	15.3 × 15 × 7/14.3 lb.

● = yes; ○ = no. ^A The number of dead pixels we found in the single review unit we tested. ^B Manufacturer's suggested retail price. ^C A shipping version of this unit was not available at press time.

at varying degrees of brightness, depending on the electrical jolt. The brightness, in turn, influences red, green, and blue color filters, giving each crystal a different color. Three different-colored crystals make up one pixel, which the eye sees as a dot of light. Thousands of these dots make up the picture on screen.

Since flat panels rely on low-voltage transistors, rather than high-voltage electron beams, for their jolt, they run cooler than their CRT counterparts and use about one-third the energy. They also produce much less electromagnetic radiation than CRT monitors do, which makes them safer for radiation-conscious environments such as hospitals (or your desk).

Don't Be Passive Active-matrix technology is actually an improvement on *passive matrix*, a technology used in lower-end notebooks. Passive-matrix displays suffer from dramatically subdued color and soft text.

The inferior output of passive matrix comes from its attempt to skimp on electricity. An active-matrix screen boasts one transistor for every liquid crystal, whereas a passive-matrix display tries to get by with one transistor per row of crystals.

Getting the Skinny

Early production models of flat panels suffered from terrible *viewing angles*—meaning that if you moved an inch, the image on your screen would become distorted and unreadable. They didn't produce text very well, either, often displaying fuzzy, bleary characters.

The 19 displays that Macworld Lab tested were not completely free of these problems, but some fared better than others (see the benchmark, "Flat Panels Come of Age," for test results; for a comparison of features, see the table, "Flat Panels Compared"). The picture on one of our Editors' Choice picks, the \$1,399 PCX-DT3140, from Hitachi (www.hitachi.com), is almost indistinguishable from that of a conventional monitor, and the unit has fantastic natural color and almost perfect viewing angles. It is as bright as any CRT's, and color images show no posterization (where color pixels are lost and an image appears flat as on a poster). As for text, a Microsoft Excel spreadsheet filled with letters and numbers in a myriad of sizes, fonts, and styles looked razor-sharp and crisp, with no smearing or bleeding around icons. Our one complaint: 14 inches is small by today's standards.

Movin' On Up Which brings us to a healthy crop of 15-inch displays, led by one from Apple Computer.

Apple's first flat-panel monitor, the \$1,299 Apple Studio Display (www.apple.com), is made of the same stunning translucent plastic as the iMac, only in bluish-purple. It's the only monitor in our roundup that doesn't require a special adapter, unless you are using a computer with a VGA port. In our color-performance tests, which measured a monitor's *color gamut*, or the range of colors a monitor was able to display, the Studio Display scored higher than any other monitor, and in the image-quality tests, the jurors were pleased with its color and detail rendition. It could, however,

Dead Pixels ^	Auto Reset	Free Mac Adapter	Built-in Speakers	Height Adjustment on Stand	Comments
	○	●	○	●	Its good looks go far beyond Apple's signature translucent plastic to nice images and decent text.
	○	○	○	○	Inexpensive, and it shows—its images and text left us squinting.
	○	○	●	○	This bright monitor is a good bargain, if you don't mind its terrible vertical viewing angle.
	●	○	●	○	This display has an overall cool color cast, and its vertical viewing angle makes it hard to read what's on the screen.
	○	○	○	○	The horizontal viewing angle on the CRT-quality Hitachi is so good that we don't recommend it if you have nosy coworkers.
	●	●	○	○	Sharp text and good color are overshadowed by a distracting shimmery twinkle on this display's screen.
	●	●	○	○	Not a bad choice for a 15-inch monitor, with decent viewing angles and acceptable image quality.
	●	●	○	○	One of the worst performers among the 14-inch monitors in this review, this NEC is not a good investment.
	●	○	○	●	We were impressed with its viewing angles and image quality. If you don't need pivoting, this might be your display.
	●	○	○	●	The best option if you want a pivoting display in order to look at files in portrait mode.
	●	●	○	○	A solid performer with decent text and image reproduction—the better of the two big displays, in a stylish black case.
	●	○	○	●	The image and text quality were fair, but the vertical stripes on-screen make this 20-inch monitor one to avoid.
	○	○	●	○	A better price tag and improved controls would make this monitor, which has nice color and text overall, one to consider.
	●	●	●	○	You get what you pay for in this bargain display: bad viewing angles with barely acceptable text and image quality.
	○	○	●	○	The only flat panel with straight digital connection—no analog translation in the way makes for good images and sharp text.
	○	●	●	○	The cheapest in our roundup, this monitor is hampered by poor viewing angles and fuzzy text.
	○	●	●	○	If you can get past the poor viewing angles, the color reproduction and text crispness on this monitor will please.
	○	○	●	○	When you see this on sale, pass it by. Its poor vertical viewing angle and fuzzy text will only aggravate your eyes.
	●	●	○	○	The unit we tested was a little warm-toned but impressive overall, with sharp text and great detail on pictures.
	○	●	○	○	This unit has decent viewing angles and sharp text, but minor color-gradation problems keep us from calling it great.

offer crisper text and a better vertical viewing angle. Its good image quality, stylish design, and Mac-savvy make it our 15-inch Editors' Choice pick, but a few other monitors do have the edge on it in terms of viewing angles and sharpness.

Other top performers in the 15-inch group were the \$1,599 CPD-L150, from Sony Electronics (www.ita.sel.sony.com), and the \$1,599 MultiSync LCD1510, from NEC Technologies (www.nec.com). We liked the Sony because of its good viewing angles. Although not as outstanding as the Hitachi, it still allows for a comfortable range of head motion.

The NEC LCD1510 was the only display in the group that could be pivoted without noticeable image-quality degradation. Pivoting (tilting the monitor from landscape to portrait mode) is easy with these lightweight displays. Other monitors also boasted the ability to operate in a portrait orientation, but the NEC LCD1510 was the only monitor out of the 19 we tested that we

felt could really do it successfully. Most of the monitors didn't work at all when pivoted, due to software conflicts.

Next in Line After the top few performers, display quality drops off considerably. But there are still some standout monitors worth noting, such as Princeton Graphics Systems' \$995 DPP 500. The product we looked at wasn't a shipping version, so we couldn't test it, but we felt that it was important to include because it is the first display of its kind—all digital. Standard CRTs, and most available LCD displays, take an analog video signal from your computer and must synchronize it to display it on the screen. This synchronization is necessary because a CRT monitor is essentially an analog device, but it can degrade image quality.

Due to the prevalence of CRT monitors, today's graphics cards are not equipped to handle a digital-to-digital connection for displays. To solve that problem, ATI Technologies, a

continues



Flat Panels Come of Age

Although amazingly small and light, early flat screens tended to falter in brightness, color reproduction, and viewing angles. Our brightness and color-gamut measurements show that some displays have evolved more than others. In general, the better the color gamut and brightness, the better the flat-panel image looked to the jury that evaluated each monitor for image quality and text clarity. Overall, both vertical and horizontal viewing angles have improved on flat screens, but we found a few displays with viewing angles that were still unacceptable for day-to-day use.

Best results in red.

	OBJECTIVE TESTS				SUBJECTIVE EVALUATIONS		
	Brightness in Footlamberts		Color Gamut		Horizontal Viewing Angle	Vertical Viewing Angle	Image Quality
14-Inch Monitors							
Eizo FlexScan L23	<div><div></div></div>	41	<div><div></div></div>	0.077	Excellent	Poor	Excellent
★ Hitachi PCX-DT3140	<div><div></div></div>	52	<div><div></div></div>	0.073	Excellent	Fair	Excellent
NEC MultiSync LCD400V	<div><div></div></div>	44	<div><div></div></div>	0.065	Fair	Poor	Poor
Samsung SyncMaster 320 TFT	<div><div></div></div>	40	<div><div></div></div>	0.070	Poor	Poor	Fair
15-Inch Monitors							
★ Apple Studio Display	<div><div></div></div>	31	<div><div></div></div>	0.110	Excellent	Poor	Excellent
Compaq TFT450	<div><div></div></div>	37	<div><div></div></div>	0.074	Excellent	Fair	Poor
CTX PanoView 745	<div><div></div></div>	58	<div><div></div></div>	0.051	Excellent	Poor	Fair
Mitsubishi LCD40	<div><div></div></div>	40	<div><div></div></div>	0.092	Fair	Excellent	Fair
Mitsubishi LCD50	<div><div></div></div>	46	<div><div></div></div>	0.083	Excellent	Fair	Fair
NEC MultiSync LCD1510	<div><div></div></div>	34	<div><div></div></div>	0.069	Excellent	Excellent	Fair
NEC MultiSync LCD1510V	<div><div></div></div>	34	<div><div></div></div>	0.068	Excellent	Excellent	Excellent
Panasonic PanaFlat LC50S	<div><div></div></div>	47	<div><div></div></div>	0.097	Fair	Fair	Fair
Philips Brilliance 151AX	<div><div></div></div>	42	<div><div></div></div>	0.097	Poor	Poor	Fair
Samsung SyncMaster 520 TFT	<div><div></div></div>	40	<div><div></div></div>	0.091	Poor	Poor	Excellent
Sceptre FT15	<div><div></div></div>	41	<div><div></div></div>	0.051	Fair	Poor	Poor
Sony CPD-L150	<div><div></div></div>	31	<div><div></div></div>	0.073	Excellent	Fair	Excellent
ViewSonic ViewPanel VP150	<div><div></div></div>	32	<div><div></div></div>	0.092	Fair	Fair	Fair
20-Inch+ Monitors							
NEC MultiSync LCD2010	<div><div></div></div>	45	<div><div></div></div>	0.080	Excellent	Poor	Fair
NEC MultiSync LCD2000 Special Edition	<div><div></div></div>	32	<div><div></div></div>	0.082	Excellent	Excellent	Fair
★ = EDITORS' CHOICE							
Longer bars are better.							

★ = EDITORS' CHOICE

Longer bars are better.

Behind Our Tests

Macworld Lab conducted objective tests with a Minolta CA-110 color analyzer. All monitors were tested at their highest resolution at 65Hz. Brightness is in footlamberts and represents the monitor's default setting. Color gamut is measured against the range of possible colors the human eye can see, using a specialized index. During testing we used each monitor's default setting. We gauged degrees of viewing angle by adjusting each

panel in both dimensions and noting color dropout, color shift, and text visibility. Macworld Lab also conducted subjective tests, comparing each monitor with a Radius PressView 17SR. Image quality was determined by a jury of three people, who assigned a score for each monitor according to how well it displayed our test images in Microsoft Excel and Adobe Photoshop.—Macworld Lab testing supervised by Jeffy Milstead

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graphics-card maker, developed a new digital-to-digital standard for flat-panel monitors. The Princeton DPP 500 is the only monitor in our roundup that uses it. It requires a special PCI card, an add-on graphics card that does the digital-to-digital transfer, so you'll need to have a free slot. The DPP 500 was comparable to the rest of the top flat panels in image quality and especially sharp in text reproduction.

Bargain Hunting We like a good deal as much as the next person, but there are a few flat panels in this roundup we'd simply recommend you avoid, even if the price is right.

Like the putrid-orange sweater you bought for \$15 because it was cashmere, the wacky color on the \$949 TFT450 flat-panel display, from Compaq (www.compaq.com), will prompt you to relegate it to a closet. Its poor viewing angle makes reading the screen a dreaded chore. Similarly weak is the FT15, from Sceptre (www.sceptre.com). At \$1,199, it isn't even cheap.

If you want a flat-panel display that is cheap but tolerable, go for the \$899 PanoView 745, from CTX International (www.ctxintl.com). Even though its vertical viewing angle isn't laudable, the color and text aren't bad.

The Gamble

Of course, flat panels have their faults. Prices are dropping, but you still pay as much for a 15-inch flat panel as for a 21-inch CRT monitor.

Also, a flat panel won't solve all your display dilemmas. For instance, one problem in CRTs *and* flat panels is dimming light sources. After a few years, the light sources in both begin to lose their brightness, making the images on your screen appear faded. The best solution for dimming bulbs? Buy a new monitor.

Flat-panel displays are subject to dead pixels, which show up as dots on the screen. A dead pixel is a liquid crystal that doesn't bend to accommodate the light needed to produce an image. All but 7 of the 20 monitors we looked at had at least one dead pixel when we got it out of the box.

If you need higher-than-average resolution, then flat panels will disappoint. Most flat panels top out at 1,024 by 768 pixels, although NEC's 20-inch panels go up to 1,152 by 870 and 1,280 by 1,024 pixels.

Except for the Apple Studio Display, all the flat panels we looked at need a special adapter for use with the Mac. Although about half have their own adapter, you can buy one for about \$15.

View from Tomorrow

The future of flat panels isn't all about liquid-crystal displays. Even while newer flat-panel models, such as the Princeton DPP 550, are changing from an analog to an all-digital format, display companies are working to develop other types of technology.

One new display technology on the rise is plasma. In this approach, cells made up of red, green, and blue phosphors are encased in a layer of gas. Electrical energy is used to excite the gases, which in turn trigger the cells to emit colored light. The



Nothin' Flat Hitachi's PCX-DT3140 is a 14-inch monitor with CRT-like image quality.

color depends on the intensity of the electrical signal. Today this technology is used only in large displays.

Another up-and-coming display option is light-emitting-polymer, or LEP, technology. LEP uses a thin layer of plastic film that has the potential to create a flat screen as thin as paper.

As plasma and light-emitting-polymer technologies become viable, flat-panel prices and quality should improve.

Macworld's Buying Advice

If you thought flat-panel monitors were the stuff of science fiction, think again. After testing 19 slim displays, we've determined that if the time has come to buy a new monitor, it isn't jumping the gun to consider an LCD.

We discovered that some LCD attempts from manufacturers are best avoided because their poor viewing angles, blurry text, and lifeless color quality will leave you begging for a CRT. But in this collection of thin displays, there are also a few standouts that boast as-good-as-CRT crispness with text and numbers as well as true-to-life color and superior horizontal and vertical viewing angles.

Is it time to make your world flat? Not if you need a large display with no compromises. But if space is an issue and you're ready to take the plunge for a new or second monitor, it's time to take a look at flat panels. **m**

Display specialist JULIE POLITO is a San Francisco-area journalist who writes about technology.

EDITORS' CHOICE

14-Inch Display

★★★★ Hitachi PCX-DT3140 This flat panel made believers out of the LCD skeptics at *Macworld*. Although it's on the small side at 14 inches, no other display compared. You'd never know from looking at this monitor that problems like poor viewing angles and bleary, fuzzy, unreadable characters are common among LCD displays—it rivals the best CRTs. **Company:** Hitachi America (650/589-8300, www.hitachi.com). **Company's estimated price:** \$1,399.

15-Inch Display

★★★★½ Apple Studio Display Although not as impressive as the Hitachi display, Apple's first flat-panel monitor is tops in terms of color performance, scored high in image-quality tests, and doesn't require a VGA-to-Mac adapter. And lest we forget, its sleek blue-plastic exterior takes it off the scale in terms of design. **Company:** Apple Computer (408/996-1010, www.apple.com). **Company's estimated price:** \$1,299.

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The Extensions Workshop is the showcase for the most popular desktop publishing, multimedia and pre-press applications. Its bound to be a major attraction at MACWORLD Expo! Join the World-Wide Power Company and XChange NA in demonstrating and reviewing cutting-edge extensions designed to help you create and publish compelling content.

MACINTOSH GAMING CHAMPIONSHIP & EXHIBITIONS

Showcasing the latest gaming titles and environments for the iMac and other Mac products, the Macintosh Gaming Exhibitions is a high-energy interactive area to get your hands-on today's hottest games. Featuring the ultra-successful National Macintosh Gaming Championship and retail store, you will have the opportunity to demonstrate, compete, and buy the latest Mac game titles.

Check out www.macworldexpo.com regularly for updates and announcements about other new special attractions on the MACWORLD Expo show floor, including areas dedicated to QuickTime™, Internet server and application development tools, video streaming and content asset management.



PRE-CONFERENCE WORKSHOPS

**Monday, January 4, 1999:
12:00 p.m. – 7:00 p.m.**

**Make the most of your time at
MACWORLD Expo/San Francisco.
Take advantage of this unique
opportunity to spend an entire
day getting in-depth training
before the conferences and
exhibits begin. Full workshop
session descriptions are
posted on the Web at:
www.macworldexpo.com.**

- [WA]** Practical Introduction to Mac Networking
- [WB]** Designing Web Pages with Dynamic HTML
- [WC]** Desktop Publishing: The Big Picture
- [WD]** Creation of High Quality Photographic Web Content
- [WE]** Essentials of Web Publishing
- [WF]** Putting Internet Commerce to Work
- [WG]** Optimizing AppleShare IP in the Integrated Network Environment
- [WH]** Macintosh Network Administration with the Apple Network Administrators Toolkit
- [WI]** Introduction to Content Asset Management
- [WJ]** Workflow Automation with AppleScript

THE CONFERENCE PROGRAM

Macworld/Pro Conference • MACWORLD Expo Users Conference

Macworld/Pro The Technical Conference for Macintosh Professionals January 5 - 7, 1999

Get in-depth, advanced technical training at MACWORLD Expo by participating in the Macworld/Pro Conference. Improve your skills, meet other Mac professionals with similar challenges and stay on top of your profession. The Macworld/Pro Conference is designed for:

- Webmasters, Content Creators, Web Entrepreneurs, Web Developers
- Network Managers, Network Administrators
- Support Professionals
- Developers
- Mac Platform Managers from Business, Government and Education
- IS/IT/MIS Managers
- Educators

Participate in these sessions led by a faculty of world-class instructors and lecturers and take your computing efforts to the next level. You'll emerge from this conference with enhanced skills and a wealth of new information. Here's what you can expect.

Macintosh Networking & Communications

This track presents techniques and technologies associated with deploying Macintosh LANs, WANs, Internet/Intranets and remote access. These technical sessions take you inside the protocols and services you will encounter when using Macs on a network.

Sessions Include:

- Open Transport Update – the Macs on TCP/IP Report
- Tuning Open Transport
- On the Trail of Network Problems
- High Speed Connection Alternatives – Which is Best for You?
- Building a Mac-Centric Intranet
- ... and more

Creative Track 1

This track hosts several theme days of education for creative professionals. "PDF Day" goes inside the world of the Portable Document Format and reveals how you can mass distribute documents to users and ensure consistent viewability. "Managing New Media Businesses Day" offers sage advice and practical tips for competing in

the hot new media creative world. "Publishing Automation Day" offers 3 solution filled sessions for optimizing publishing workflow processes to save you time and money.

Sessions Include:

- Introduction to PDF
- PDF in the Real World
- Color Management: Digital Proofing
- Pub Auto: Working in RGB
- Pub Auto: Taking Content In-House
- ... and more!

Creative Track 2

The second Creative Track features full days of courses for professional Webmasters, Digital Video and Broadcast pros, and some fascinating and informative sessions about Content Asset Management. Attend these sessions and you will go inside these hot areas and discover new means to enhance your skills.

Sessions Include:

- Web Day: Understanding and Applying XML
- Web Day: Top 20 Tips for Webmasters
- Video Day: Producing Interactive TV for WebTV
- Video Day: Production for Digital Broadcast
- Content Management: Web-Based Content Management
- ... and more!

Creative Track 3

Creative Track 3 offers a comprehensive curriculum of Color Management courses. Learn how to insure color from source through delivery in these hot, timely and cutting edge sessions. The track is rounded out with a series of practical sessions on Pre-Flighting, Web Audio and QuickTime™ that will provide excellent advice on these ground breaking technologies.

Sessions Include:

- Color Management: ColorSync Workflow
- Color Management: Deploying Color Servers
- Create Biz: Issues in Running a Web Design Agency
- Pre-flighting or How to Save \$400 at the Service Bureau
- Delivering Audio on the WWW
- ... and more!

Managing the Mac Platform

The Macintosh continues to be a platform in transition. Environments that deploy Mac OS and related technologies are being forced to evolve along with the platform. It is now more critical than ever to approach Mac systems management methodically no matter what size your organization.

Sessions Include:

- Managing Your Hardware Assets
- Software License Compliance
- Backup Planning and Disaster Recovery
- Planning the Next Generation Mac
- Technical Overview of USB
- ... and more!

MACWORLD Expo Users Conference

January 6 - 8, 1999

Learn from the professionals about how to use your Mac at work, at home, at school and on the road by participating in this conference program.

Maxing Your Mac

Put your Macintosh in full throttle and squeeze every bit of performance out of it. Whether you're working with an old Mac or the latest fully loaded model, you'll get a lot of sound advice and useful tips from experts.

Sessions Include:

- Connect your New iMac to Your Old Stuff
- Fabulous Powerbook Speedups
- How to Get the Most from Your iMac
- Mysteries of the System Folder Revealed – Part I & II
- Troubleshooting - Unlikely Solutions
- ... and more!

The MACWORLD Expo Gallery

Creative people have always chosen the Macintosh as the best tool for turning their vision into reality. This track features renown artists from around the Mac community demonstrating their dazzling works and explaining how they used Mac-based tools to achieve their stunning success. See why the Macintosh is still the premiere environment for bringing creative ideas to life.

Sessions Include:

- 3D Techniques
- Making Beautiful Music: The Macintosh Musician
- Ho-Hum to WOW in 60 Seconds Flat
- How'd they do that (with Adobe Illustrator!)
- Creative Macintosh Layout Techniques
- ... and more!

Crash Courses

Need to get the scoop on the latest technology? Want to get up to speed with the hottest tools? Attend our Crash Courses for a quick hit of technology explanations to help make you a more informed Macintosh user.

Sessions Include:

- Getting Started with Digital Photography
- Getting Setup for the Internet
- Other Uses on the Mac
- Your First Web Page
- How the Internet Works
- ... and more!

more ►

FOR A COMPLETE EXHIBITOR LIST, UP-TO-THE MINUTE INFORMATION,

OR TO REGISTER, CALL (800) 645-EXPO
OR VISIT:

www.macworldexpo.com

THE CONFERENCE PROGRAM

Macworld/Pro Conference • MACWORLD Expo Users Conference

Top Tools

Extend your mastery of a variety of Mac tools by attending these power-user sessions. Whether you're wondering how to get more out of the tools you use every day or learn what a new tool can do for you, these sessions will unlock the secrets of your favorite programs and get you up to speed quickly with advanced features you didn't know were available.

Sessions Include:

- Advanced Filemaker Techniques
- Just Flash It!
- Better HTML
- Hot Quark Tips and Tricks
- Digital Wizardry with Photoshop
- ... and more!

Apple Technology Tutorials

Inside your Macintosh are some of the most advanced and innovative system technologies available on any computer platform. Gain in-depth understanding of these technologies, learn why they're special.

Sessions Include:

- Introduction to QuickTime™ 3.0
- Understanding ColorSync
- Secrets of AppleScript Wizard
- Mac OS Update
- Setting Up a LAN with AppleShare IP
- ... and more!

Center Stage

We've invited some of the luminaries from the Mac community to share their visions, educate, entertain and enlighten you in these sessions. On Center Stage you'll gain new perspectives from some of the most progressive thinkers in our industry.

Sessions Include:

- How to Be a Mac Power User
- Renegade Publishing
- How to Ruin the Internet
- Delivering on the Promise of the Web: Making Everyone a Desktop Publisher
- ... and more!

Small Office/Home Office (SOHO)

It's never been easier or more fun to use Macintosh technology to launch and operate a small company, home-based business or to telecommute from your home office. Learn from experts how to put technology to work for you painlessly to create a lean, mean business machine.

Sessions Include:

- Putting Your Small Business on the Web
- Be a Mac Office—Even if Your Clients are on Windows!
- Telecommuting Essentials
- Small Business Intranet Instruction Kit: Part I and II
- Macintosh Telephony for Small Business
- ... and more!

For Educators Only

The Macintosh paradigm for computing ease-of-use has made it the platform of choice for educators world-wide. This track showcases innovative applications and techniques that can enhance both learning and teaching opportunities in your school.

Sessions Include:

- A Taste of Apple Staff Development
- Practical uses of QuickTime™ in Education
- ... and more!

Macworld Magazine Presents

Macworld's editors, columnists and featured guest speakers present the hottest topics straight off the pages of the industry's premier publication.

Sessions Include:

- Macworld Magazine's Presents Vision Thing Live
- Macworld Magazine's Presents Newsmakers... A Candid Discussion
- Macworld Magazine's Best of Show
- Ask the Experts
- The Game Hall of Fame
- The Best of Macworld Magazine's Mac Secrets
- ... and more!

Goodies

These light-hearted sessions are just for fun! Come join fellow members of the Macintosh user community as we celebrate technology in this wild, weird and wonderful track.

Sessions Include:

- Better Living Through Home Electronics – Gadgets
- Palm Pilot & Macintosh – A Match Synched in Heaven
- The Game Gurus
- Home Networking for the Two Computer Family
- Sports on the Internet
- ... and more!

Travel Made Easy & Convenient!

Travel to MACWORLD Expo/San Francisco Made Easy and Convenient!

Early booking is strongly advised to ensure best hotel selection. Hotel reservations will be assigned on a first-come first-served basis based on availability. Rates shown are per night, per room, and do not include room tax, currently 14% San Francisco occupancy tax. After December 1, 1998 the convention rate may not apply.

Air Reservations: Exclusive discounted fares are available to San Francisco, San Jose and Oakland airports via United Airlines and Delta. A MACWORLD Expo travel professional can assist you with access to these fares or you may contact the airlines directly utilizing the MACWORLD Expo discount numbers below. Additionally, your travel agent may utilize these discount numbers and receive the same low fares.

UNITED: (800) 521-4041 #525XR

DELTA: (800) 241-6760 #DMN119486A

Responsibility and Liability:

Convention Housing Management (CHM) and IDG Expo Management Company, travel program sponsor, and/or their agents act only in the capacity of agents for customers in all matters pertaining to hotel accommodations and transportation whether railroad, motor car, airplane, or any other means, and as such are not responsible for any damage, expense or change in schedule or condition from any loss, injury or damage to any person or property from any cause whatsoever. Baggage handling throughout the program is entirely at the owner's risk. The customer agrees that IDG Expo Management/CHM shall not be held responsible in the event of any errors or omissions in any promotional material.

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Management

Please contact:

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for travel inquiries:**

**1700 The Alameda, 2nd Floor,
San Jose, CA 95126.**

**Telephone: (800) 799-9914
within the United States or
(408) 918-4200 outside of
the United States.**

Fax: (408) 918-4250

Email: macworld@chmrooms.com.

www.macworldexpo.com

MACWORLD EXPO / SAN FRANCISCO ADVANCE REGISTRATION FORM

1. REGISTRATION SELECTION AND FEES (SELECT ONE ONLY)

DEADLINE FOR SAVINGS IS DECEMBER 4!

All Conference and Keynote Sessions are on a first-come, first-served basis, with the exception of the Pre-Conference Workshops. Please choose your package and fill out the form completely. Incomplete forms will be returned. Please use one form per person; make photocopies for additional people.

Early Discount
Registration
on or before 12/4/98 via
phone, www, fax or mail
\$895

Regular
Registration
(12/5/98-12/30/98)
via phone, www or on-site
\$995

☐ **Package 1 – SUPER PASS (Jan. 4-8)**
Includes: Pre-Conference Workshops • Lunch (Mon. only) • Keynote Presentation • Macworld/Pro
Conference Sessions • MACWORLD Expo Users Conference Sessions • Exhibits • Town Meeting
W (Write in your Workshop selection code— see list on page 3 of ad. Forms without workshop selection will be returned.)

☐ **Package 2 – Macworld/Pro and Pre-Conference Workshop (Jan. 4-7)** \$795 \$895
Includes: Pre-Conference Workshop • Lunch (Mon. only) • Keynote Presentation • Macworld/Pro Conference Sessions
• Exhibits • Town Meeting
W (Write in your Workshop selection code— see list on page 3 of ad. Forms without workshop selection will be returned.)

☐ **Package 3 – Macworld/Pro Conference (Jan. 5-7)** \$595 \$695
Includes: Macworld/Pro Conference Sessions • Keynote Presentation • Exhibits • Town Meeting

☐ **Package 4 – MACWORLD Expo Users Conference and Pre-Conference Workshop (Jan. 4-8)** \$395 \$445
Includes: Pre-Conference Workshop • MACWORLD Expo Users Conference Sessions • Lunch (Mon. only)
• Keynote Presentation • Exhibits • Town Meeting
W (Write in your Workshop selection code— see list on page 3 of ad. Forms without workshop selection will be returned.)

☐ **Package 5 – MACWORLD Expo Users Conference (Jan. 6-8)** \$170 \$195
Includes: MACWORLD Expo Users Conference Sessions • Keynote Presentation • Exhibits • Town Meeting

☐ **Package 6 – Full-Day Pre-Conference Workshop (Jan. 4)** \$295 \$345
Includes: Pre-Conference Workshop • Lunch (Mon. only) • Keynote Presentation • Exhibits • Town Meeting
W (Write in your Workshop selection code— see list on page 3 of ad. Forms without workshop selection will be returned.)

☐ **Package 7 – Exhibits ONLY (Jan. 5-8)** \$29 \$45
Includes: Admission to the Exhibits ONLY. Does not include admission to the Keynote Presentation or Town Meeting



Moscone Convention Center
SAN FRANCISCO

- Pre-Conference Workshop: Jan. 4
- Town Meeting: Jan. 4
- Keynote: Jan. 5
- Macworld/Pro Conference: Jan. 5-7
- Exhibits: Jan. 5-8
- MACWORLD Expo Users Conference: Jan. 6-8

Conditions and Policies:

- Payment must accompany form for registration to be complete.
- Purchase orders not accepted.
- Fax and mail registrations received after Dec. 4 will be returned unprocessed.
- This form cannot be used for on-site registration.
- All registration fees are non-refundable and credentials are non-transferable.
- A \$20 fee will be charged for all returned checks.

2. CUSTOMER INFORMATION

First Name M.I. Last Name

Title

Company

Street Address (please include apt. #, suite, mail stop, etc.)

P.O. Box (if applicable)

City State/Province Zip Code/Postal Code

Country Telephone Extension

Fax Internet/Email Address

DEADLINE!

PLEASE READ!

- The Deadline for all fax and mail registrations is Dec. 4. All fax and mail registration received after this date will be returned.
- You may still register at regular prices via Web or phone from Dec. 5 - Dec. 30.
- If you register between Dec. 5 and Dec. 30, you MUST pick up your badge on-site at the On-Site Badge Pick-Up Counter.
- All international (including Canada) attendees must pick up badge on-site at the On-Site Badge Pick-Up Counter.
- Confirmation of registration will be sent once registration is processed. Pre-registration deadline is December 4, 1998
- U.S. Badges will be mailed after December 22 for registrations received through 12/4/98.
- Workshops and Conference Sessions are subject to change. Check our web site frequently for updates: www.macworldexpo.com
- On-Site Registration Hours:
January 4: 8:00 a.m.- 4:00 p.m.,
January 5-7: 8:00 a.m.- 6:00 p.m.,
January 8: 8:00 a.m.- 4:00 p.m.

3. ATTENDEE PROFILE

MUST BE FILLED OUT TO PROCESS YOUR BADGE.

WHAT IS YOUR INDUSTRY? (CHECK ONE ONLY)

☐ 1. Accounting/Finance

☐ 18. Printing/Publishing

☐ 31. Educator

☐ 48. Macintosh Powerbook Series

☐ 49. Macintosh Performa Series

☐ 50. Macintosh Quadra Series

☐ 51. Macintosh Workgroup Series

☐ 52. PowerMac

☐ 53. iMac

☐ 54. PowerMac G3

☐ 55. PowerBook G3

☐ 56. IBM PC or compatible desktop

☐ 57. IBM Laptop/Notebook

☐ 58. Other

☐ 2. Aerospace

☐ 19. Transportation

☐ 32. Engineering/Scientific/R&D

☐ 40. Software Developer

☐ 41. Training

☐ 42. Other

☐ 3. Architecture/Construction/Process Industries☐ 20. Utilities☐ 33. Human Resources☐ 34. Management/Department Head☐ 35. Marketing/Sales☐ 36. Network Management☐ 37. Professional (Lawyer, Doctor, etc.)☐ 38. Programming/Analysis☐ 39. Purchasing☐ 40. Software Developer☐ 41. Training☐ 42. Other☐ 4. Art/Design/Creative Services☐ 21. Other☐ 36. Network Management☐ 37. Professional (Lawyer, Doctor, etc.)☐ 38. Programming/Analysis☐ 39. Purchasing☐ 40. Software Developer☐ 41. Training☐ 42. Other☐ 5. Arts & Entertainment☐ 22. For My Company/Organization/Department☐ 23. For Myself as Consultant/Sole Proprietor☐ 24. For myself as Consumer☐ 25. Art Director/Graphics☐ 26. Consultant☐ 27. Controller/Treasurer/Accounting/CFD☐ 28. Corporate Executive☐ 29. DP/IS Management/CIO☐ 30. Editorial/Writing☐ 6. Computer Reseller/VAR/VAD/Service☐ 22. For My Company/Organization/Department☐ 23. For Myself as Consultant/Sole Proprietor☐ 24. For myself as Consumer☐ 25. Art Director/Graphics☐ 26. Consultant☐ 27. Controller/Treasurer/Accounting/CFD☐ 28. Corporate Executive☐ 29. DP/IS Management/CIO☐ 30. Editorial/Writing☐ 7. Consulting☐ 22. For My Company/Organization/Department☐ 23. For Myself as Consultant/Sole Proprietor☐ 24. For myself as Consumer☐ 25. Art Director/Graphics☐ 26. Consultant☐ 27. Controller/Treasurer/Accounting/CFD☐ 28. Corporate Executive☐ 29. DP/IS Management/CIO☐ 30. Editorial/Writing☐ 8. Education: K-12☐ 22. For My Company/Organization/Department☐ 23. For Myself as Consultant/Sole Proprietor☐ 24. For myself as Consumer☐ 25. Art Director/Graphics☐ 26. Consultant☐ 27. Controller/Treasurer/Accounting/CFD☐ 28. Corporate Executive☐ 29. DP/IS Management/CIO☐ 30. Editorial/Writing☐ 9. Education: Higher Ed☐ 22. For My Company/Organization/Department☐ 23. For Myself as Consultant/Sole Proprietor☐ 24. For myself as Consumer☐ 25. Art Director/Graphics☐ 26. Consultant☐ 27. Controller/Treasurer/Accounting/CFD☐ 28. Corporate Executive☐ 29. DP/IS Management/CIO☐ 30. Editorial/Writing☐ 10. Education: Other☐ 22. For My Company/Organization/Department☐ 23. For Myself as Consultant/Sole Proprietor☐ 24. For myself as Consumer☐ 25. Art Director/Graphics☐ 26. Consultant☐ 27. Controller/Treasurer/Accounting/CFD☐ 28. Corporate Executive☐ 29. DP/IS Management/CIO☐ 30. Editorial/Writing☐ 11. Engineering/R&D☐ 22. For My Company/Organization/Department☐ 23. For Myself as Consultant/Sole Proprietor☐ 24. For myself as Consumer☐ 25. Art Director/Graphics☐ 26. Consultant☐ 27. Controller/Treasurer/Accounting/CFD☐ 28. Corporate Executive☐ 29. DP/IS Management/CIO☐ 30. Editorial/Writing☐ 12. Government/Military☐ 22. For My Company/Organization/Department☐ 23. For Myself as Consultant/Sole Proprietor☐ 24. For myself as Consumer☐ 25. Art Director/Graphics☐ 26. Consultant☐ 27. Controller/Treasurer/Accounting/CFD☐ 28. Corporate Executive☐ 29. DP/IS Management/CIO☐ 30. Editorial/Writing☐ 13. Health/Medical Services☐ 22. For My Company/Organization/Department☐ 23. For Myself as Consultant/Sole Proprietor☐ 24. For myself as Consumer☐ 25. Art Director/Graphics☐ 26. Consultant☐ 27. Controller/Treasurer/Accounting/CFD☐ 28. Corporate Executive☐ 29. DP/IS Management/CIO☐ 30. Editorial/Writing☐ 14. Legal Services☐ 22. For My Company/Organization/Department☐ 23. For Myself as Consultant/Sole Proprietor☐ 24. For myself as Consumer☐ 25. Art Director/Graphics☐ 26. Consultant☐ 27. Controller/Treasurer/Accounting/CFD☐ 28. Corporate Executive☐ 29. DP/IS Management/CIO☐ 30. Editorial/Writing☐ 15. Manufacturing (Computer Industry)☐ 22. For My Company/Organization/Department☐ 23. For Myself as Consultant/Sole Proprietor☐ 24. For myself as Consumer☐ 25. Art Director/Graphics☐ 26. Consultant☐ 27. Controller/Treasurer/Accounting/CFD☐ 28. Corporate Executive☐ 29. DP/IS Management/CIO☐ 30. Editorial/Writing☐ 16. Manufacturing (Non-Computer Industry)☐ 22. For My Company/Organization/Department☐ 23. For Myself as Consultant/Sole Proprietor☐ 24. For myself as Consumer☐ 25. Art Director/Graphics☐ 26. Consultant☐ 27. Controller/Treasurer/Accounting/CFD☐ 28. Corporate Executive☐ 29. DP/IS Management/CIO☐ 30. Editorial/Writing☐ 17. Marketing Sales/PR/Communications☐ 22. For My Company/Organization/Department☐ 23. For Myself as Consultant/Sole Proprietor☐ 24. For myself as Consumer☐ 25. Art Director/Graphics☐ 26. Consultant☐ 27. Controller/Treasurer/Accounting/CFD☐ 28. Corporate Executive☐ 29. DP/IS Management/CIO☐ 30. Editorial/Writing

WHAT IS THE SIZE OF YOUR ORGANIZATION?

☐ 43. Under 50☐ 44. 50-99☐ 45. 100-499☐ 46. 500-999☐ 47. 1000 & Over

WHICH PERSONAL COMPUTERS DO YOU USE?

☐ 48. Macintosh Powerbook Series☐ 49. Macintosh Performa Series☐ 50. Macintosh Quadra Series☐ 51. Macintosh Workgroup Series☐ 52. PowerMac☐ 53. iMac☐ 54. PowerMac G3☐ 55. PowerBook G3☐ 56. IBM PC or compatible desktop☐ 57. IBM Laptop/Notebook☐ 58. Other

ARE THE COMPUTERS AT YOUR ORGANIZATION NETWORKED?

☐ 59. Yes☐ 60. No

4. PAYMENT METHOD (YOU'LL BE CHARGED FOR ALL REGISTRATIONS RECEIVED INCLUDING DUPLICATES.)

Payment must accompany form for registration to be complete. DON'T PAY TWICE FOR THIS EVENT! You will be charged for all registrations received, and will not be refunded for duplicate registrations. Please use one method of registration only.

☐ Check enclosed (make payable to MACWORLD Expo). Enclose check and form in an envelope.

☐ Master Card ☐ Visa ☐ American Express Amount \$

Account Number Expiration Date

If card holder is other than registrant, please print card holder's name below:

First Name M.I. Last Name

Card Holder Signature

REGISTER NOW!

Use ONE of the following methods to register with this form:

Phone: 800-645 EXPO or 781-551-9800 outside of the U.S. (\$5 Service fee does apply) **THROUGH DEC. 30.** Registrations received after 12/4 will be charged at regular pricing.

Web: www.macworldexpo.com **THROUGH DEC. 30.** Registrations received after 12/4 will be charged at regular pricing.

Mail to: MACWORLD Expo /San Francisco P.O. Box 9103, Norwood, MA 02062-9103. **THROUGH DEC. 4 ONLY.**

Fax: 781-440-0359. Faxed registration form must include credit card information **THROUGH DEC. 4 ONLY.**

(TTY) Service is available for the hearing impaired. Dial 781.440.0366.

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<http://store.gtinteractive.com>

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Choose 31 at www.macworld.com/getinfo



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Secrets

What Do You Want to Read Today?

MAKING THE MOST OF ADOBE READER

by Joseph Schorr

Adobe's Portable Document Format is just about everywhere you look nowadays: software manuals, store catalogs, and even IRS tax forms are all available as PDF files. What makes these files so popular is that they're self-contained documents that retain their original formatting and can be read on a Mac or a PC with the aid of a small, free program called Acrobat Reader (www.adobe.com/acrobat/readstep.html).

If PDF files seem to be coming at you from every direction, it's time to get up to speed on how to open, navigate, and extract data from them as quickly and easily as possible—and that means tapping into some of the surprisingly powerful but easy-to-miss features lurking in Acrobat Reader.

Speed Reading

Reader is designed for fast, easy document viewing. To really speed through documents with a minimum of clicking and scrolling, however, bypass the Reader tool bar and use some shortcuts.

- Move from page to page by using the page up and page down keys or the arrow keys (right and down move you forward; left and up move you backward). To jump to a specific page, press ⌘-5, type in the page number, and press return.

- To scroll vertically *within* a page, hold down the shift key while using the

arrow keys; to scroll horizontally, press shift-left arrow and shift-right arrow.

- To see more of your document at once, press ⌘-shift-B to hide the Reader tool bar and ⌘-shift-M to hide the menu bar. The same keystrokes make those items reappear.

One-Shot Text Grabbing

Often you'll want to convert the content of a PDF file into plain text that you can paste into another document. To grab a specific chunk of text, you use the Select Text tool (press ⌘-option-4) and then drag over the text. But if you want to grab

all the text in a document, you can bypass the Select Text tool—just press ⌘-A to select all the text in one shot and then ⌘-C to grab every word in the document.

To confirm that you have indeed copied everything you intended *before* switching to another application to paste it, use Reader's Show Clipboard command in the Window menu to get a preview of the selected text or graphics.

Turn Pages into Pictures

You can also turn an entire page of a PDF file—including all the text and graphics—*continues*



ics—into a single image that can be copied and pasted into another document. Press ⌘-option-5, to switch to the Select Graphics tool; ⌘-A, to select the entire page as one giant graphic; and ⌘-C, to copy it—and then switch to another application to paste the page.

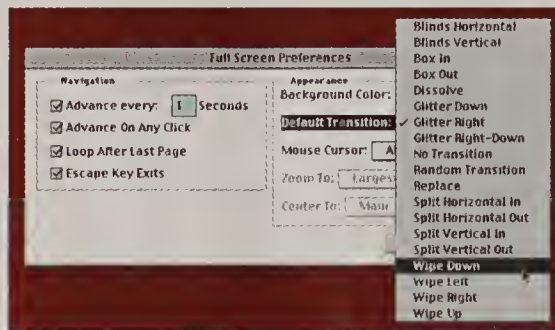
Reader as PowerPoint

If you think Reader is nothing more than a bare-bones document viewer for reading online manuals, you obviously haven't tried the mind-blowing presentation features that essentially turn it into a tiny, free version of Microsoft PowerPoint. Yes, Reader is the world's least-expensive slide-presentation program.

When you open a PDF file with Reader and press ⌘-shift-L, the page instantly fills every inch of your screen—no windows, no menu bar—just like a slide-presentation program. Amazingly, even in this full-screen mode, you can still move from page to page (by using the up and down arrow keys or by pressing ⌘-5 to jump to a specific page) and zoom in and out (press ⌘-L and then choose a level of magnification). To jump back into normal-screen mode, just press the escape key.

It gets better. Choose Full Screen from the Preferences submenu in Reader 3.0's File menu, and you're given a whole array of presentation options. You can

have Reader advance from page to page automatically at any interval between 1 and 60 seconds or have it wait until you click the mouse. You can make a presentation loop. You can choose to make the



Wiped Out Using Reader's Full Screen Preferences, you can apply transitions such as wipes and dissolves to slides in a slide show.

cursor visible during a slide show or keep it hidden. You can select virtually any background color and pick from among 18 transitional effects, so you can have one slide dissolve, wipe, glitter, or split into the next (see "Wiped Out"). And let's not forget about antialiased text; not even PowerPoint can make text look as good on a slide. (To have Reader antialias the text, turn on the Smooth Text And Monochrome Images option in the General Preferences dialog box.)

Yes, Reader lacks builds, background templates, and animation. But think about what it *does* offer: if you have Acro-

bat, you can build a presentation in virtually any program; distill it into a PDF file; and head out on the road, knowing that you'll be able to present it on any Mac or PC you encounter, using a *free* program that just about everyone on earth has installed.

Keep Yourself Current

If you try to open a PDF file you've downloaded from the Web and it won't cooperate (or generates an error message), check the version of Acrobat Reader you have installed. Most current PDF files are saved as Acrobat 3.0 documents and use a compression scheme that earlier versions don't support. To solve the problem, just trash Reader 2.1 and download a fresh copy of the current version, 3.0.1.

Acrobat Reader, like SimpleText, is one of those little programs that seem to multiply on your hard disk; it's not usual for installers to dump extra copies of it, given the fact that so many software manuals, reference guides, and tutorials are now supplied in PDF form. Clean out those superfluous copies to avoid inadvertently trying to open documents with the wrong version. **m**

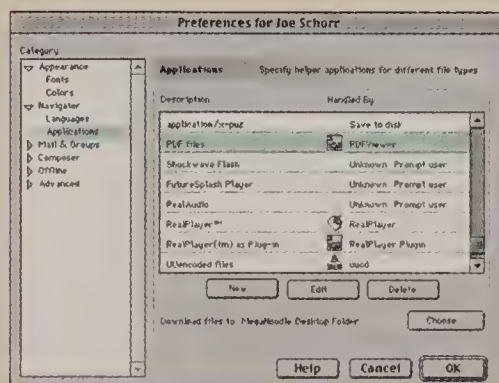
JOSEPH SCHORR is coauthor of *Macworld Mac Secrets*, fifth edition (IDG Books Worldwide, 1998), which is available in PDF form.

Reader and the Web

ONE OF THE MOST COMMON PLACES to run into PDF files these days is on the Web: forms, product brochures, maps, diagrams, and other documents are all available as downloadable PDF files. Fortunately, the current versions of both Netscape Navigator and Microsoft Internet Explorer let you view PDF files without leaving your browser—but only if it's properly configured with Adobe's PDFViewer, a version of Acrobat Reader that actually runs within the browser. If Navigator doesn't know what to do when it stumbles on a PDF file, here's how you can teach it to be PDF-savvy (the directions are similar for Explorer).

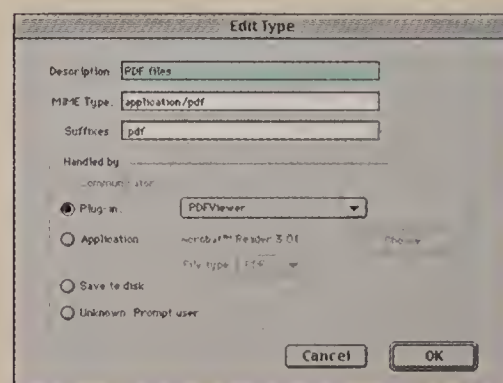
1. Make sure Navigator's Plug-ins folder contains the Adobe PDFViewer plug-in.

2. Open Navigator's Preferences window, and click on the Applications category. This is where you specify which program or plug-in to use when opening each type of file. Scroll down to the Portable Document Format entry, and click on Edit.



Choose your plug-in in the Preferences window.

3. In the Edit Type dialog box, make sure the information is filled out exactly as shown here. Now, whenever Navigator encounters a PDF file, it will fire up PDFViewer and display the document in the browser window. (If you click on the Application radio button instead and select Acrobat Reader, Navigator will launch Reader to display PDF files.)



The Edit Type dialog box should look like this.

Tips, Tricks, and Shortcuts

by Lon Poole

Leave your PowerBook behind if you just want to read your e-mail on the road.

John Haynes of Euclid, Ohio, suggests using a Web e-mail account instead to get free access to your regular e-mail from

anywhere you can lay your hands on a Web browser: a colleague's office, a friend's house, even a public library.

Don't worry about stranding your e-mail messages on foreign computers—you can set your Web e-mail account to leave the e-mail on its original server, where you can retrieve it later with your own computer. Just make sure your regular e-mail account lives on a POP3 server (the most common kind) that isn't behind a security firewall. Some corporate e-mail servers are behind firewalls, but most Internet service providers' servers aren't.

You can get a free Web e-mail account from Yahoo (www.yahoo.com) or Hotmail (www.hotmail.com) and configure it to check your regular e-mail account. You can also do this with an existing Yahoo RocketMail account.

To set up your Web e-mail account so that it checks your regular e-mail account, you need to know the name of your POP server (for example, pop.earthlink.com), your e-mail ID (usually the first part of your e-mail address), and your e-mail password. To configure Yahoo Mail to check up to three POP accounts, click the Options link and then the External Mail link. To set up Hotmail to check up to four POP accounts, click the Options link and then the POP Mail link.

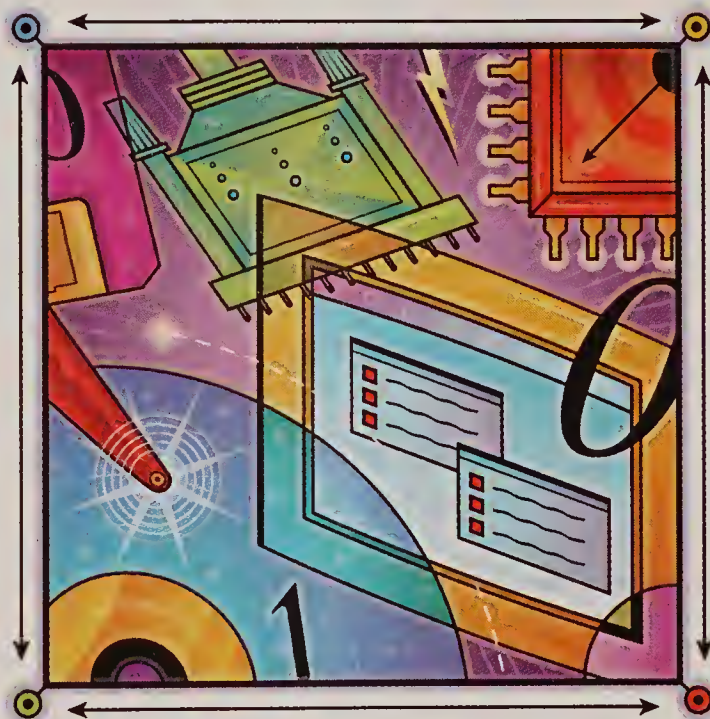
You must take some extra steps to keep your Web e-mail private when using a public or borrowed Web browser. In Yahoo Mail, click the Exit link and then the Sign Out Completely link. In Hot-

mail, click the Log Out link. If you use Microsoft Internet Explorer, close the browser window after using Hotmail—this prevents the next person from using Explorer's Back button to return to the Hotmail log-in page, copy your password, and paste it into the Scrapbook where it can be read unencrypted. This isn't a problem with Netscape Navigator, which clears the password when you use the Back button. Yahoo Mail clears your pass-

iMac in a Small Network

Q. I'm buying an iMac, and I'll need to transfer onto it the contents of my Power Macintosh 7200's hard drive. The data won't fit on the Zip disks I have, but as both Macs have an Ethernet port, I wonder how hard it would be to connect the two in a network. What extras would I have to buy?

PAUL BELMORE
Boring, Oregon



A. If both Macs are in the same room, you can interconnect them with nothing more than a 10BaseT crossover cable, available at computer stores and mail-order companies for about \$10. Your Power Mac 7200 has a 10BaseT Ethernet port, and your iMac's 100BaseT port is compatible with 10BaseT. Many other Mac models have an AUI Ethernet port and require a \$30 transceiver for 10BaseT. Still others have no built-in Ethernet and require an Ethernet adapter card.

word automatically with either browser.

For additional security, clear the browser cache, which contains copies of messages you've read, and quit the browser. To clear the cache in Internet Explorer, choose Preferences from the Edit menu, expand the Web Browser category, select Advanced under it, and click the Empty Now button. In Navigator 4, choose Preferences from the Edit menu, expand the Advanced category, and select Cache under it. Then click the Clear Disk Cache Now button. In Navigator 3, choose Network Preferences from the Options menu, click the Cache tab, and then click the Clear Disk Cache Now button.

For longer-distance networks or those containing more than two computers, you need a 10BaseT hub and regular (not crossover) cables to connect the computers to the hub. Prices start at around \$30 for a generic five-port 10BaseT hub and go up depending on the number of ports and the brand name. Buy cables certified for a 100BaseT network—known as Category 5 cables—since they're not much more expensive than the Category 3 cables used for 10BaseT networks. If you route the Category 5 cables carefully to avoid sharp bends and proximity to electrical wires, you should be able to

continues

upgrade your network with a 100BaseT hub later if you acquire more computers with 100BaseT ports like the iMac.

Set the AppleTalk control panel (Network control panel for System 7.5.5 or earlier) on your Macs to connect via Ethernet. On one Mac, turn on file sharing with the File Sharing control panel (Sharing Setup control panel in System 7.X). Connect to this Mac, using the Chooser on the other Mac (or Macs). For detailed instructions, see the Sharing Files topic in the Help menu's Mac OS Help (or the Guide menu's Mac OS Guide, in System 7.X). If you use a crossover cable to interconnect two Macs, the first Mac to start up may reset its AppleTalk setting to the built-in LocalTalk (printer) port. If so, change the Connect Via setting in the Mac's AppleTalk control panel.

iMac Disk-Format Fears

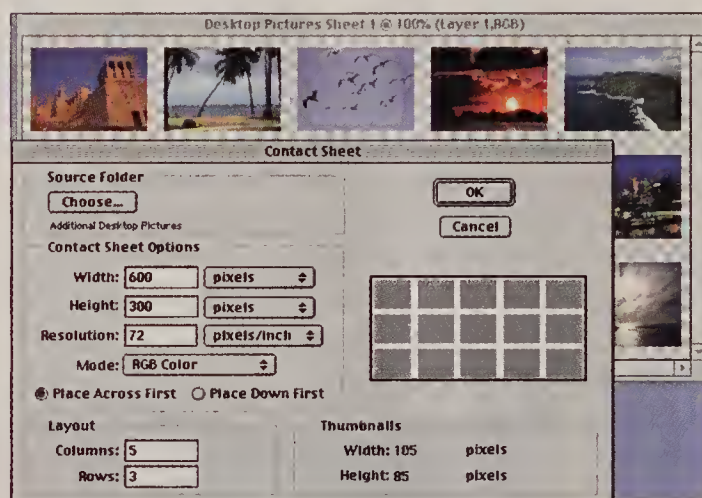
Q I was looking at the spot where my new iMac will sit, when a sudden thought racked me with fear: the iMac will surely use the new Mac OS Extended Format, HFS+, available with Mac OS 8.1. But I understand that this new disk-formatting scheme may cause files to be unreadable by service bureaus or other Macs not upgraded to HFS+. Should I worry, or do I have the whole HFS+ issue backwards?

ANDREW DUNCAN
Atlanta, Georgia

A Yes, the iMac's internal hard disk uses the Mac OS Extended Format, but an internal disk's format doesn't affect how files are stored on other disks. If you copy files to an external disk or send them as e-mail attachments, the destination disk's format determines how the files are stored.

The problem you've heard about occurs if you insert a removable disk, such as an Iomega Zip disk, that uses the Mac OS Extended Format into another Mac that is running Mac OS 8 or earlier—which can't read files on Mac OS Extended Format disks. That same removable disk would be accessible on any Mac running Mac OS 8.1 or 8.5, even if that Mac's start-up disk uses the Mac OS Standard Format. Keep this in mind if you reformat any removable disks in Zip, SyQuest SparQ, or Imation SuperDisk drives that you attach to your iMac.

Do not use Symantec's Norton Utilities for Macintosh (NUM) 3.5.1 or earlier, because it can damage a Mac OS Extended Format disk. Use NUM 4.0, which can fix damaged Mac OS Extended Format disks. Another disk-repair utility that works with the Mac OS Extended Format is Apple's Disk First Aid 8.2, which comes with the iMac and is available for free from Apple's Software Updates Library (http://swupdates.info.apple.com/cgi-bin/lister.pl?Apple_Support_Area/Apple_Software_Updates/US/Macintosh/Utilities/Disk_First_



Instant Web Thumbnails You can make a page of thumbnails for your Web site with Adobe Photoshop 5.0's Contact Sheet command. Specifying the size of the contact sheet and the number of rows and columns it has determines the thumbnail proportions.

Aid). Other alternatives include MicroMat's \$150 TechTool Pro 2 (707/837-8012, www.micromat.com) and Total Recall's \$90 HFS MacMedic (719/380-1616, www.macmedic.recallusa.com).

Quick Web Thumbnails

TIP If you want to display a gallery of images on your Web site, create a page of quick-loading image thumbnails that a visitor can click individually to see the full-size images. You can make a thumbnail page easily with Adobe Photoshop 5.0's Contact Sheet command, found in the File menu's Automate submenu. It takes all the full-size images from a folder you specify, creates thumbnails for them, and places the thumbnails in neat rows in a new image that looks like a photographer's contact sheet (see "Instant Web Thumbnails"). Save this image as a JPEG file, and then create an image map of it, using either SimpleText and HTML or a Web authoring application such as Adobe PageMill.

Then make individual pages for the full-size images, and you have a gallery.

JACOB GLAZER
New York, New York

You can also make a page of thumbnails with the \$25 iView Multimedia catalog shareware, from Script Software (415/449-3450, www.scriptsoftware.com). It's more flexible and faster than Photoshop, and handles movies as well as pictures. Just choose HTML Gallery from the Export submenu of the File menu, and iView creates an HTML page of thumbnails with links to full-size image files.—L.P.

A Few Find File Tricks

TIP After finding an item with the Find File application in Mac OS 8.1 and earlier, you can simultaneously open the item and quit Find File by pressing the option key while double-clicking the item in the Items Found window. This saves you the trouble of going back to quit Find File.

CHAS CONWAY
Mahomet, Illinois

For more tricks for Mac OS 8.1 and earlier, choose Find File Shortcuts from Find File's Help menu (Guide menu in System 7.X). Mac OS 8.5's Find has fewer shortcuts; to learn them, choose Mac OS Help from the Help menu. In the Help window, click Files And Programs on the left and then click Finding Files on the right. When the Finding Files article appears, scroll down and click the Shortcuts For Finding Files link.—L.P. m

LON POOLE answers readers' questions and selects reader-submitted tips for this monthly column. His latest book is *Macworld Mac OS 8 Bible* (IDG Books Worldwide, 1997).

All shareware and freeware mentioned in *Quick Tips* is available from the Macworld Online software library (www.macdownload.com).

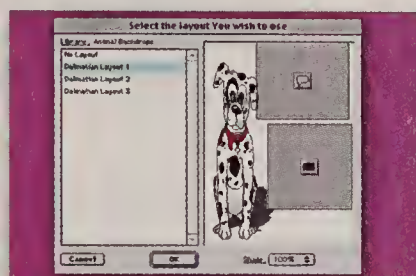
We pay \$25 to \$100 for tips on how to use Macs, peripherals, or software. Please include your full name and address, so that we can send you your payment. Send questions or tips to quicktips@macworld.com or to Macworld Quick Tips, 301 Howard St., 16th Fl., San Francisco, CA 94105. All published submissions become the sole property of *Macworld*. Due to the high volume of mail received, we cannot provide personal responses.

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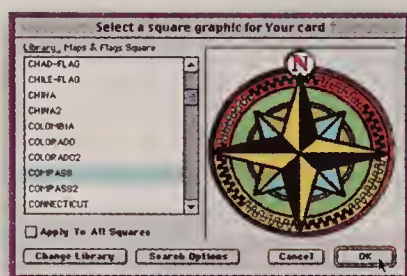
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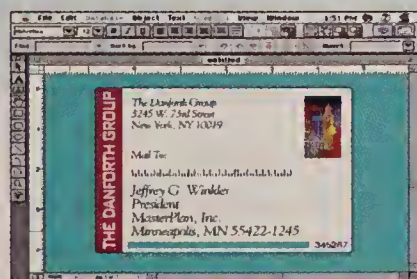
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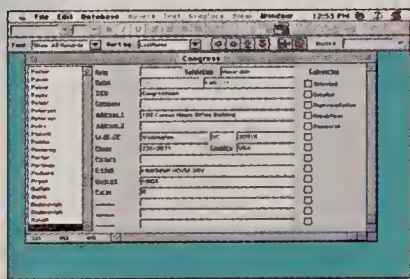
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GRAPHICS

Photoshop Retouching Techniques

Tips and Tricks for Cleaning Up Your Images

by David Blatner

We can argue all day about the ethics of digital imaging—whether it's acceptable to remove an obstructing telephone pole from a picture of the house you're trying to sell, or whether the media should be allowed to digitally alter the images we encounter in newspapers and magazines. Ethical or not, retouching is a part of life in most commercial photo labs, and Adobe Photoshop is an excellent tool for the job.

What follows are some techniques to keep in mind when retouching scanned images in Photoshop, whether you're removing specks of dust or an entire element from an image. You can decide for yourself how far you want to take these methods. Just make sure that when you retouch an image, you have the right to do so; some photographers are (justifiably) very touchy about their images and believe that any alteration degrades the truthfulness of the picture.

Rules of the Game

When you're retouching images in Photoshop, always work in the 100 percent view (where one screen pixel equals one image pixel); otherwise, your screen display won't accurately represent the image data. And work on a layer separate from the original image whenever possible. The original image will ultimately be altered when you flatten the layers, but until then you never know when you might need those original pixels.

If you're laboring under the misconception that dirty, noisy film grain in digital images is undesirable, think again; photographic grain can be your friend, masking all kinds of retouching. In fact, with most images, the biggest problem is

losing film grain in the retouching process, so some areas of the images become flatter and less noisy than others. Do whatever it takes to avoid or correct the problem, even if that means using the Add Noise filter to restore grain to the image. Of course, if the picture was taken with a digital camera, there won't be any film grain to begin with; don't add noise to such an image unless you're trying for a special effect.

And finally, a warning: the human eye is extremely good at seeing patterns and inconsistencies. It's important when retouching to pay attention to the scene as a whole, not just to the piece you're working on. Removing a blemish from a photograph can cause even-more-blatant problems if you ignore lighting direction, shadows, and the overall tone of the image.

A Clean Fix

Retouching is more art than science, and the process of creating art can be learned only by doing (and redoing). The techniques described here can help, but it's only by applying them to a variety of images that you can start combining these methods and coming up with your own. Whether you're repairing a nineteenth-century photograph, taking a few years off the subject of a portrait, or creating a three-headed mongoose for a tabloid, the goal is to feel comfortable using retouching to fool viewers' eyes. **m**

DAVID BLATNER is the coauthor of *Real World Photoshop 5* and *The QuarkXPress 4 Book* (both from Peachpit Press, 1998). You can reach him at david@moo.com.

continues



Removing Spots

OF ALL THE TOOLS PHOTOSHOP GIVES YOU FOR RETOUCHING, THE MOST important is the rubber stamp. This tool makes it easy to erase annoying dirt and spots by duplicating nearby pixels to obliterate the specks.

1 Create a new layer, and then click on the Use All Layers check box in the Rubber Stamp Options palette (in version 4, the box was called Sample Merged Layers).

2 Select New View from the View menu, zoom way in so you can see the pixels in one of the views (**B**), and set the other view to 100 percent (**A**). Work in the zoomed-in view, but always check your work in the 100 percent window.

3 Choose a hard-edged brush (softer edges blur the texture of the film grain) from the Rubber Stamp Options palette.

4 Try not to paint with a dragging motion. Instead, option-click to pick a source point and then click on the offending spot to copy that source (**C**). Check your results in the 100 percent view (**D**).

5 If you need more than one click to remove the spot, change your source point for each correction, to avoid creating noticeable patterns. The result is a lot of clicking and option-clicking but also a much better final product.

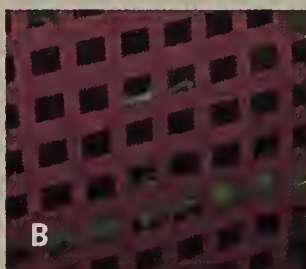
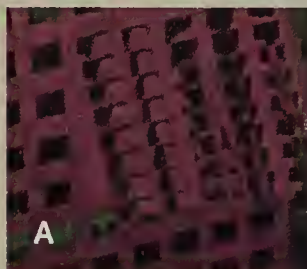


Dragging with the Rubber Stamp Tool

There are times when click-click-clicking with the rubber stamp tool just doesn't cut it. If you're trying to remove a larger scratch or copy an area of an image—say, to duplicate a series of windows on a building at another point on the building—you'll need to paint by dragging the mouse rather than by clicking.

Fortunately, Photoshop 5 improves on the previous rubber stamp tool in a subtle but important way (actually, Adobe simply changed it back to the way it worked in version 2). If you clicked and dragged with the rubber stamp tool in version 3 or 4 (after selecting a source point), you risked creating a "hall of mirrors" effect (**A**), because the tool copied pixels that had *already* been copied.

In version 5, the rubber stamp ignores the already-copied pixels while you're dragging; it copies only the original, underlying pixels (**B**).



Removing Lines

SOME OF THE MOST TEDIOUS RETOUCHING tasks come in the form of long, thin scratches, or power lines that always seem more

noticeable in a photograph than they did in reality. Photoshop's pen and rubber stamp tools can work together to erase such lines when they lie over flat areas that have little detail. (You would think Photoshop's built-in Dust And Scratches filter would work for this kind of thing; it doesn't and can actually do more harm than good.)

1 This barn would be picture-perfect if it weren't for that pesky rope dangling in front of the flat blue sky. We could use just the rubber stamp tool to get rid of it, but that would take much too long.



2 Instead, draw a path with the pen tool, keeping it as close to the center of the line as possible. Save the path by double-clicking on the Work Path in the Paths palette.



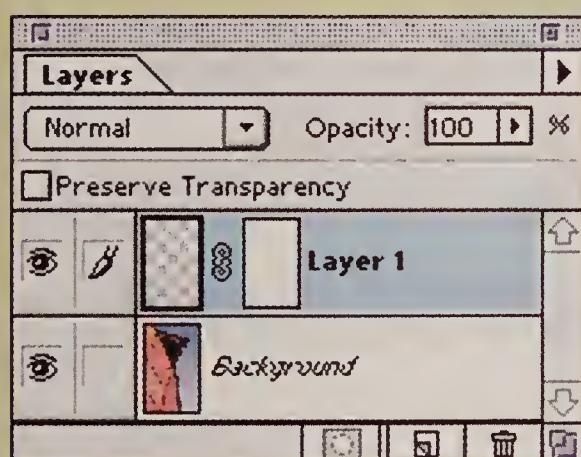
3 Click on the rubber stamp tool and choose a soft-edged brush that's slightly wider than the line at its widest point. Set the mode to Lighten, since this is a dark-colored object (if it were a light-colored object, you'd use Darken). Option-click directly to the left or the right of the beginning of the path to set the source point.

4 Create a new layer, making sure that Use All Layers is turned on in the Options palette, and drag the path over the Stroke button at the bottom of the Paths palette. The result: the line is replaced by sky.

(A little spot retouching was necessary to take out the rope where it crossed the wood.)



5 When retouching is done on a separate layer, you can see "before" and "after" views by toggling the eyeball in the Layers palette. If you've unintentionally painted over an area of the image, try adding a layer mask and painting in black over that area.



6 The final image, sans rope. Because we set the mode to Lighten, the copied pixels look natural, not duplicated.



Removing Features

TINY OBJECTS SUCH AS DUST AND SCRATCHES ARE THE BREAD AND BUTTER of the retouching industry, but sometimes major surgery is required. Removing an object is much more difficult than removing a mere spot; the larger the element you want to remove, the harder it will be to retouch the picture and still fool viewers' eyes. In this example, we want to remove a pencil from an image. The technique we'll use to do that works because the background is relatively flat, lacking details that would be recognizable when it's copied.

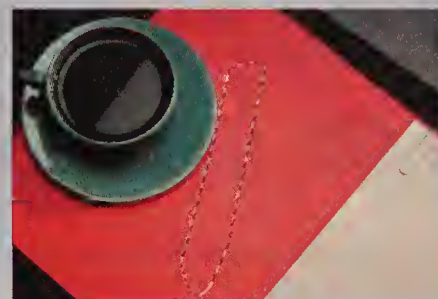
1 Select the area you want to remove, and feather the selection slightly (perhaps four or five pixels) with the lasso tool.



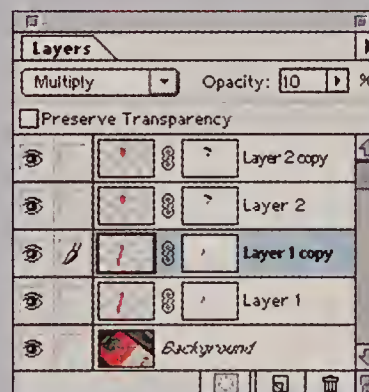
2 Drag the selection to the area you want to copy, and duplicate the background pixels onto a new layer by pressing ⌘-J.



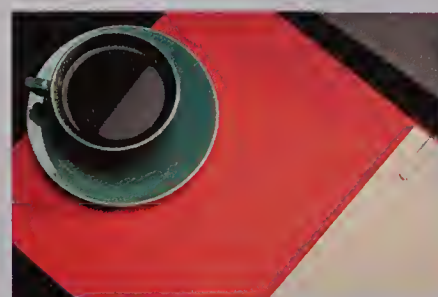
3 Use the Move tool to drag the new layer onto the pencil. (Photoshop wouldn't ordinarily display the dashed marquee; it's included here to make the effect easier to see.)



4 The shadows that were cast on the pencil and selected area are now obscured, causing a visual anomaly. To fix this, you can duplicate the layers, add layer masks, set layer modes and opacities—in general, do anything it takes to correct the problem.



5 The final flattened image. A process that would have taken half an hour with the rubber stamp tool took only minutes with this technique.





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Easy Tables in QuarkXPress

Tricks and Tools Take the Frustration Out of Creating Tables

by Brad Walrod

One of the most common complaints among QuarkXPress users of all skill levels is that tables are just too difficult to create quickly or with any degree of accuracy with XPress's built-in table tools.

An alternative is the wealth of dedicated XTensions offered by third-party developers (see the sidebars). All the table-making XTensions have one thing in common: they do the math for you by adding together the widths of the longest entry in each of the columns, subtracting that total from the table width, and distributing the remainder of the space among the gutters between columns. What differentiates the XTensions are their interfaces, the options they offer for aligning columns and distributing gutter space, and the way they handle cells.

If you're willing to do the math on your own or have a good eye for aligning columns manually, you may be able to manage without XTensions. You can get by with using XPress's tab commands if all you're doing is aligning a few columns of numbers or single lines of text, but any job involving more than a handful of tabs quickly becomes daunting. However, once you know the ins and outs of the tab commands, you'll be creating tables within QuarkXPress faster and with less hassle.

Setting Paragraph Tabs

Once you've entered or imported your tabbed text and applied the appropriate character and paragraph styling, you can use XPress's Paragraph Tabs dialog box to align the columns:

1. Click anywhere in a line with tabs.
2. Select Tabs, from the Style menu (or type ⌘-shift-T).
3. In the Paragraph Tabs dialog box, choose an alignment.
4. Type in a numeric value, or drag an arrow on the tab ruler to the desired position.
5. Click on Apply.

6. Repeat steps 3 through 5 until the columns are aligned; then click on OK.

Of the six choices for alignment—Left, Center, Right, Decimal, Comma, and Align On—the last one is the most flexible (see “Different Columns, Different Alignments”). With Align On, you can specify any character as the one on which all the entries in the column will be aligned. In a column that's aligned on a particular character (including a decimal or comma), items that don't contain the alignment character itself are placed to the left of the point on the line where the character would logically appear. Hence, a column of numbers, for example, will always be aligned properly, even if some of the numbers don't contain decimal places.

Adjusting Tab Settings

Prior to QuarkXPress 4.0, if you were to click on an existing alignment arrow and then type a number in the Position field of the Paragraph Tabs dialog box, all you'd do is create a new tab rather than edit the one that was selected. As of ver-

sion 4.0, however, an alignment arrow stays highlighted once selected; typing a new value actually changes the position of the tab. (If all else fails, you can always option-click in the tab ruler to get rid of the tab settings and start over.)

If you want to see whole numbers in the Paragraph Tabs dialog box, make sure you're in Actual Size or 200 percent view when using the ruler to create or position tabs. Otherwise, you'll end up with tab positions that go to thousandths of a point.

Using Style Sheets with Tabs

Although you can access the tab ruler when you're defining style sheets, this is not the best time to set tabs, because there's no Apply button. Instead, manually set up a table whose structure you will use frequently, and then select Edit: Style Sheets to create a style sheet that uses those settings. As long as you don't base the new style sheet on another style sheet, XPress will automatically pick up all the specs—including tab

continues



settings—from the paragraph in which the cursor is sitting.

If you need to edit the tab settings in the style sheet, try playing around with them directly in the document. Record your changes on a piece of paper, and then edit the style sheet to reflect those changes. It's not an elegant solution, but it gives you the convenience of working on tabs within the document and the security of knowing that all tables using that style sheet will be updated automatically once any changes are made. Alternatively, you can create a fresh style sheet with your new tab settings and delete the old style sheet; when you're prompted for the name of the replacement style sheet, choose the one you just created.

Borrowing Tab Settings

Once you've assigned tab positions to a paragraph, it's relatively easy to copy them to other paragraphs, even if the settings aren't part of a style sheet. Just select some paragraphs (making sure the paragraph with the proper tabs is at the top of the selection), go into the Paragraph Tabs dialog box, and click on OK; those tab positions will be assigned to all the selected paragraphs.

An alternative is to copy attributes from one paragraph to another. To do this, click in the paragraph to which the settings will be copied and then option-shift-click in the paragraph *from* which the settings will be copied. Be careful, though; *all* the paragraph settings will be copied, including a style sheet if one has been applied.

Adding Horizontal Rules

Used judiciously, XPress's Paragraph Rules command (Style: Rules) can make even a table filled with the most-boring

	Employer code	Average deduction	Percent of net earnings	Rating
All responding employers				
BY REGION				
Pacific	WD40	748.9	77%	■
South Central	90210	830.1	16	→
New England	CAR54	702.32	29	▲
Mid-Atlantic	ADAM12	252.2	56	●
South Atlantic	RT66	562	15	▼
BY INDUSTRY				
Consumer Products	HSKJS48	874	56	■
Manufacturing	ALMWD4	568.9	77	●
Wholesale	SK9ONF	1,074.9	64	■

Different Columns, Different Alignments Ignoring the column heads (which often aren't aligned the same as the column entries), note how each of the alignment types used here—right, decimal, aligned on percent symbol, and centered—positions the columns differently.

data look sharp. If your text starts at the left margin and ends at the right, you don't even need to worry about indenting the rules. Just specify a rule below the paragraph, choose an appropriate offset and width, and repeat for the remaining rows.

A note about offsets and widths: if you don't want the rule below the paragraph to disappear if the table is the last thing on the page, use fixed (rather than percentage) offsets. And never use the hairline thickness; that thickness can change on output, depending on which version of XPress you're using.

Another great use of rules—those that appear *above* the paragraph—is to create knockout heads that separate the sections of a table. Make your text white (or another light color), choose a darker color for the rule, and assign offset and thickness. The offset needs to be a negative number so that the rule “above” will actually rest below the baseline, and the thickness needs to be greater than the tallest character you're trying to highlight.

Upgrading to XTensions

If you find yourself creating or editing many tables—especially if they need to be produced quickly and accurately—look into the current crop of table-making XTensions. Even the inexpensive ones with limited feature sets should help noticeably speed up your table production. Gluon TableMaker, for example, is inexpensive and simple to use.¹ If you need to make tables that have multiline entries or run onto multiple pages, you may want to choose from the more powerful HX EasyTable, Entable, and Tableworks Plus XTensions.

And if you're stuck with a folderful of tables created in Microsoft Word, you can convert them into XPress objects by using Extensis's QX-Tools 4.0. Just export your tables (from the Print dialog box) as PostScript or EPS files, which can then be read by the QX-VectorEdit module. **m**

BRAD WALROD is a Brooklyn-based typesetter, trainer, and consultant and the author of *QuarkXPress Unleashed* (Random House, 1994).

Product Information

QuarkXPress 4.0

Quark
303/894-8888
www.quark.com
List price: \$995

Entable and Tableworks Plus

Tableworks
425/392-7745
www.tableworks.com
List price: \$299 each;
bundle, \$449

FCSTableMaker

FCS (distributed by
The World-Wide Power
Company)
303/940-0600
www.ibacom.es/fcs/
List price: \$95

Gluon TableMaker

Gluon
212/343-1755
www.gluon.com
List price: \$49

HX EasyTable

HanMac Software
(distributed by The World-
Wide Power Company)
303/940-0600
www.hanmac.com
List price: \$239

QX-Tools 4.0

Extensis
503/274-2020
www.extensis.com
Estimated price: \$150

XTable

York Graphic Services
717/792-3551
www.ygsi.com
List price: \$99

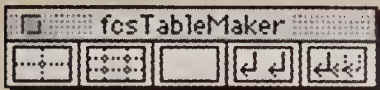
XTensions distributor

The World-Wide Power
Company
303/940-0600
www.thepowerco.com

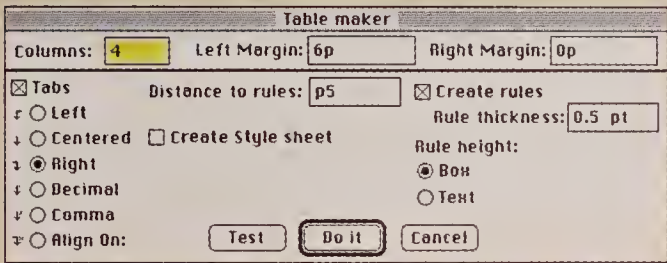
XTensions Add Vertical Rules . . .

FCS'S FCSTABLEMAKER XTENSION IS VERY EASY TO USE and offers some nice features you won't find either in XPress or in other table-making XTensions. Besides automating the creation of vertical rules and moving contiguous tab settings as a group, it lets you create evenly divided grids for pages or tables. FCSTableMaker may not be the only tool you need in order to complete a table, but it takes much of the drudgery out of the setup.

Here, we'll use the XTension to create a simple table of numbers with vertical rules separating the columns. All the features you'll need are accessible from a small, unobtrusive palette.



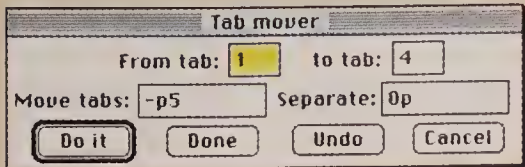
1 In the Table Maker dialog box, define the number of columns, the left and right margins of the table, and the alignment. Although all the columns initially have to use the same alignment, it's easy to change that once the table is set up.



2 To add vertical rules between columns, simply define the thickness of the rules and how far they should be offset from the text; the XTension does the rest. Rules can run from the top to the bottom of the currently selected text box, or they can align with (or extend a user-definable number of points above or below) the top and bottom of the text. Vertical rules are automatically grouped together.

Stub column	\$1234	\$5678	\$9012	\$3456
Stub 2	7890	1234	5678	9012
Stub 3	3456	7890	1234	5678

3 If you want to adjust the tab settings later, use FCSTableMaker's Tab Mover function. It moves columns to the left or right—or closer to or farther apart from each other—as a group. Best of all, the function works on all tables, whether or not they were set up with FCSTableMaker. If any additional formatting—tabular or otherwise—is needed, you can use XPress's character- and paragraph-formatting commands.



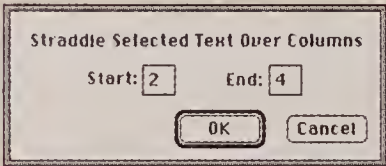
. . . and Give Your Tables Style

IF YOU'RE BUILDING TABLES THAT REQUIRE DIFFERENT alignments from column to column as well as heads that straddle multiple columns, take a look at York Graphic Services' XTable (also known as Mathable when sold with its equation-creating sibling, XMath). Here's how you create such a table.

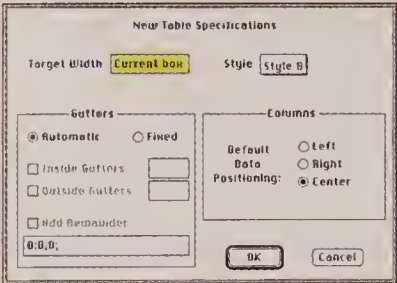
1 If the text box in which the table will reside requires a frame or some text inset, define these attributes with XPress's box-styling commands before getting started. Doing so allows XTable to factor these settings into its computations.

Types of user-specified gutters permitted				
Style	Inside	Outside	Both	Comment
A	No	No	No	Use this style with vertical rules.
B	Yes	Yes	Yes	This style table fills the measure.
C	Yes	Yes	No	These tables center in the measure.
D	No	No	No	Flush right; half gutter in front.
E	No	No	No	Flush left; half gutter after last column.
F	Yes	No	No	Flush right; left-over space in front.
G	No	No	No	All columns same width.

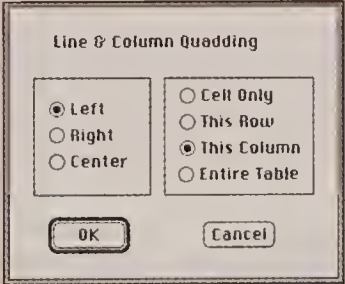
2 Select a piece of the straddling head, open the Straddle Selected Text Over Columns dialog box, and specify the columns the head will straddle.



3 Select all the text in the table, and open the New Table Specifications dialog box. Next, choose a table style—we'll use Style B, the most appropriate one for this type of table—and then select the column alignment most of your columns will use (in this case, centered).



4 Change the alignment of the last column and the straddling head by clicking anywhere in that column, calling up the Line & Column Quadding dialog box, and making the column flush left. Repeat the process for the second line of the straddling head. Finally, manually add paragraph rules—one under all the column heads and another under the straddling head—using XPress's rules feature.



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43% ...Graphic accelerator cards

59% ...Image editing software

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*Source: Content Creator Study, April 1998

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«eMediaweekly»

THE NEWSWEEKLY FOR DIGITAL MEDIA MANAGERS

FileMaker Does Video

Transform Your Database Software into a Crucial Postproduction Tool

by Henry Bortman

Video postproduction typically involves untold hours of painstaking labor, but you can make the process a little easier with some planning. If you need to reduce hours' worth of raw video down to a handful of clips ready for editing, don't just start filling up your hard drive with gigabytes of video footage—first, figure out what you have. You can greatly economize on what clips you'll need to capture by logging your footage and creating batch-capture lists. And you can do this easily in the multitasking database software you probably already own: FileMaker.

A couple of years ago, I coproduced an educational video. We interviewed a dozen kids, generating more than ten hours of video that we needed to whittle down to less than ten minutes. We decided to transcribe the material first, and then select the best clips to capture in Adobe Premiere.

A Capable Assistant

We created a custom FileMaker database and logged each clip in its own record. We made FileMaker layouts for data entry, for printing clip logs, and for printing each record on a 3-by-5-inch card. We shuffled the cards around on the floor, picked our favorite clips, and experimented with different sequences before ever opening Premiere. Finally, we produced a batch-capture list by exporting the FileMaker data to a tab-delimited text file. We imported the list into Premiere and easily captured our desired clips.

FileMaker proved to be a highly adaptable postproduction assistant. So if you're about to embark on a video project, try this technique with FileMaker—it will make the video-postproduction process less of a pain. **m**

Contributing Editor HENRY BORTMAN is coproducer of *Both of My Moms' Names Are Judy*, a video screened in more than 15 international film festivals.

Making Movies with FileMaker

THIS TECHNIQUE FOR LOGGING AND CAPTURING CLIPS CAN WORK FOR ANY documentary, training video, or other type of video project that's primarily "talking heads"; logging actions would require additional fields. With modification it can also work with any video-editing software that imports batch-capture lists. For batch-capture to work, you must use a video camera that records SMPTE time code, and capture your clips from a playback deck that supports time-code control.

Step 1: Define Your Database Fields

Begin by selecting Define Fields from FileMaker's File menu. You can add or modify fields later, but start with those in "Basic Fields for Your Video-Clip Database."

Basic Fields for Your Video-Clip Database

Talent: A text field with the name of the person interviewed.

Topic: A pop-up list of sections of the video that you determine. This lets you easily assign each sound bite to a particular section.

Sound Bite: A text field with the transcribed audio.

Comments: A text field for noting anything interesting—or annoying—about a shot.

Shot Type: A pop-up list with values for the type of shot: wide, medium-wide, medium, medium-tight, tight.

Reel: An auto-entry text field with the assigned number of the videotape containing the original footage.

In, Out: Text fields for the in and out points of a shot, in minutes and seconds.

New In, New Out: Calculated fields, based on the in and out points, formatted in SMPTE time code (hours:minutes:seconds:frames) for transfer to Adobe Premiere.

Record #: An auto-entry text field for numbering each new record—useful for finding clips quickly when your database gets large.

File Name: A calculated field that combines the information of topic, talent, and record number for easier identification in Premiere.

Card: A check box that indicates whether a record should be printed out as an index card.

Use: A check box that indicates whether a clip should be captured in Premiere.

Some fields have special functions, such as auto-entry or calculation. Auto-entry simplifies your logging task by entering repetitive data automatically. To establish auto-entry for the Talent, Reel, and Record # fields, click on each field name, one at a time, in the Define Fields dialog box, and then click on the Options button. For Reel and Talent, click on the Data check box in the Entry Options dialog box and enter the appropriate value in the text box. Enter the Reel value as a two-digit number (for example, 02 instead of 2)—this will come in handy in a later step. Change the Talent and Reel fields' auto-entry values when you switch tapes.

For Record #, click on the Serial Number check box in the Entry Options dialog box, and enter the number 1 in both the Next Value and Increment By text boxes. This will automatically increase the value in the Record # field by the defined increment for each new record you create. Do this before you create any records, or you will encounter problems later.

continues

Step 1: Define Your Database Fields (continued)

The calculated fields (New In, New Out, and File Name) are constructed automatically from data in other fields. New In and New Out are based on the In and Out fields; it's easier when logging clips to just enter minutes and seconds, but Premiere wants hours:minutes:seconds:frames. If you use one-hour tapes, you can use the two-digit reel number for "hours." The formulas shown at right in "Define Fields" combine the reel number with values in the In and Out fields, followed by "00" for frames.

The formula in File Name strings together the first letter of the Topic field with the data in the Talent and Record # fields. This makes the files sort automatically by topic when saved.

To define a calculated field, click on the Calculation radio button in the Define Fields dialog box when creating the field. In the Specify Calculation dialog box, enter the formula for the text string you want to create, or construct a formula by clicking on field names and operators. When you're finished, click on OK.

Field Name	Type	Options	View by
Talent	Text	Auto-enter Data	custom order
Topic	Text		
Sound Bite	Text		
Comments	Text		
Shot Type	Text		
Reel	Text	Auto-enter Data	
In	Text		
Out	Text		
New In	Calculation	= Reel & ":" & In & ":00"	
New Out	Calculation	= Reel & ":" & Out & ":00"	
Record #	Text	Auto-enter Data	
File Name	Calculation	= Left(Topic,1) & "-" & Talent & "-" & Record #	
Card	Text		
Use	Text		

Define Fields This is the birthplace of your video-clip database. Some fields are enhanced with functions such as auto-entry, or are calculated with simple formulas that pull data from other fields.

Step 2: Log and Select Clips

Now create a Log layout for logging your tapes. Select Layout from FileMaker's Mode menu, and drag the fields into a natural sequence according to how you'll enter information while transcribing the tapes. Drag the Talent and Reel fields into the layout header to save space when the log is printed.

To create a pop-up list for Topic, click on the field in the Log layout and select Field Format from the Format menu. In the Style section of the Field Format dialog box, click on the lower radio button, and select Pop-up List from the left pop-up menu and Define

Log Layout This simple layout is used for creating a printed log of the clips you transcribe. You'll use the printed version for making your first cuts.

Value Lists from the right menu. In the Define Value Lists dialog box, enter a name for the list and click on Create. Then click on the Use Custom Values radio button and enter a list of topic names in the text box. Use the same procedure to create a pop-up list for the Shot Type field.

To create the check box in the Card field, click on the field in the Log layout and select Field Format from the Format menu. In the Style section of the Field Format dialog box, click on the lower radio button, and select Check Boxes from the left pop-up menu and Define Value Lists from the right menu. In the Define Value Lists dialog box, name the list and enter "Yes" as the sole value in the list. "Yes" will show up in your layout, but you can resize the field so that only the check box shows. You'll assign this same value list to the Use check box in the Index Card layout in step 3.

Now start logging tapes. Run through your video and log each clip of interest in its own record in the Log layout in Browse mode. When you're done, print out and review the clip log, and check the Card check box for each clip you want to consider using. Don't forget to also check this box in the electronic records in FileMaker.

Step 3: Print Index Cards and Select Clips

Next you'll print each selected clip's information on a 3-by-5-inch index card. Create an Index Card layout in FileMaker by choosing Layout from the Mode menu, typing ⌘-N, and arranging the fields (you don't need New In, New Out, or File Name). Turn on Ruler Lines via FileMaker's Show menu to ensure that everything will fit.

Now you're ready to print. Print one topic at a time and use different-colored index cards for each topic to distinguish them at a glance. In Browse mode, select the Index Card layout and choose Find from the Mode menu. Click on the Card check box (to find only records that have this box checked) and select a topic from the Topic pop-up menu. Then click on Find.

Place a pile of index cards in your printer and print. Experiment with FileMaker's Page Setup command and your printer's input tray to get them to align. Repeat this procedure for each topic.

Once you've printed the cards, spread them on the floor,

Index Card Layout Printing clip information on 3-by-5 index cards is handy for making more cuts and experimenting with sequences.

Step 3: Print Index Cards and Select Clips (continued)

determine which clips are keepers and which are the maybes, and play around with different sequences. Pull out the cards for clips you want to capture, and check their Use check box. Don't forget to check the Use check box on each corresponding database record.

Step 4: Export Your Batch-Capture List

Now you're ready to export data for Premiere. Much of the work has already been done by the calculation fields from step 1.

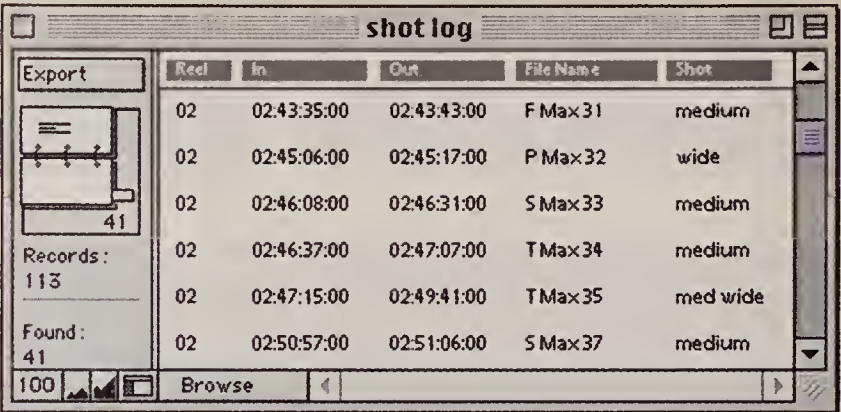
(TIP Create an Export layout if you want to double-check that the information is complete and properly formatted before exporting.)

First, do a Find and Sort. In Browse mode, select the Index Card layout and choose Find from the Mode menu. Then click on the Use check box and click on Find—this finds all records you've marked for capture. Now sort these records using the New In field as your sort index. This puts the clips in order by reel number and, more important, by In point on each reel, which eliminates shuttling back and forth on a tape during capture.

Next, select Export Records from the File menu's Import/Export submenu. In the resulting dialog box, give the export file a name, select Tab-Separated Text from the Type pop-up menu, and click on Save. In the Export Field Order dialog box, select (in order) Reel, New In, New Out, File Name, and Shot Type from the left-

TIP To find the records you want to mark, sort the database using the Record # field as the index. Note that you can't rely on the numbers in FileMaker's page flipper for finding records; every time you find or sort records, these numbers can change.

hand list and click on the Move button to move each to the right-hand list. Then click on Export. Open the text file to make sure the fields are in order. Reorder them if needed.

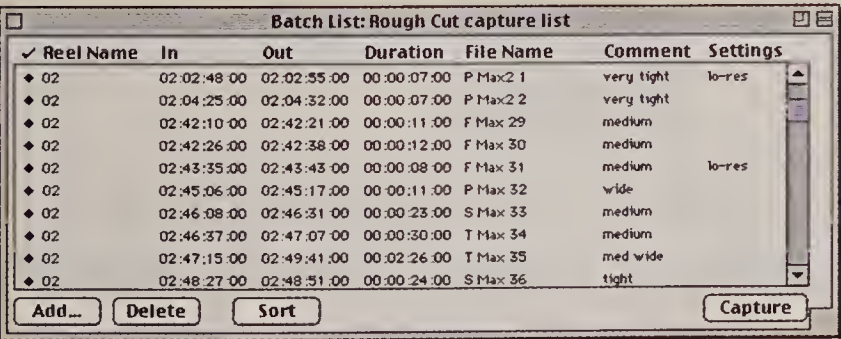


Export Layout Create a new layout to double-check that the information to be exported is complete and properly formatted.

Step 5: Import Your List into Premiere

After you create a project file in Premiere and set your audio- and video-capture parameters, select Batch Capture from Premiere's File menu's Capture submenu. In the Batch Capture window, select Import/Export Settings from the Batch Capture menu. In the Import/Export File Layout dialog box, make sure the boxes are in this order: Reel, New In, New Out, File Name, and Shot Type. This is very important—if they're out of order,

drag the names in the dialog box to rearrange them. It's particularly important that New In, New Out, and File Name be in the right locations for the corresponding fields in Premiere. Premiere's Reel Name and Comment fields, however, are arbitrary text fields. I exported the Reel # field from FileMaker for use in Premiere's Reel Name field, and Shot Type from FileMaker to go into Premiere's Comment field. You may prefer to export different information for these fields. Once the field order is set, click on OK.



Batch List The result of your earlier weeding efforts, this list tells Premiere exactly what clips to capture—a triumph of economy.

Next, select Import From Text File from the Batch Capture menu. In the File dialog box, select the text file you exported from FileMaker in step 4 and click on Open. Voilà! Your Batch List, which will look like the the one at left, is now ready to go. You'll notice extra fields in the Batch List: Duration is a calculation of each clip's length, based on the in and out points; Settings matters only if you want to use different capture parameters (resolution, frame rate, and so on) for different clips. To do this, you'll need to create and save a settings file for each unique combination of parameters, and attach the appropriate files to the desired clips. All other clips will be captured using Premiere's global settings.

Step 6: Capture Your Clips

It's a piece of cake. Open your batch list and click on the Capture button—Premiere does the rest. All you have to do is insert the appropriate videotape into your playback deck when Premiere prompts you. Premiere will capture each clip, create a file for it, and save it to disk with the name you specified.

them a bit during capture to prevent cutting off the beginning or end of a word in a sound bite. To do this, before you click on the Capture button, select Handles from the Batch Capture menu. In the Capture Handles dialog box, specify how many extra frames you want to capture on either side of your clip. I'd recommend 60 frames—2 seconds' worth.

TIP Since you logged your clips to the nearest second, pad



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December:

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Macworld editors share their hints and tips for playing popular multiplayer games and the "rules of engagement"—online gaming

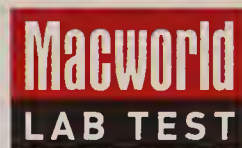
etiquette. In Game Room it's the notorious Game Hall of Shame! Macworld will look at some notable promises that game vendors have broken—including products that never shipped for the Mac and products that didn't live up to their hype.

January:

January will feature 3-D graphics—a lab-based feature testing the latest crop of 3-D accelerators. In Game Room a Macworld editor attempts to play PC games on a Mac (the heartache and headache!)

February:

February will feature the official Game Guide—a comprehensive round-up of currently shipping mac games. And in Game Room you will find sneak peaks of soon-to-ship games we can't wait to play!



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40A	Apple	—	—	BC	Kensington	1	800/535-4242	51	NEC Technologies	16	800/NECINFO
150	APS Technologies	62	—	IFC,1	La Cie	—	—	17	Newer Technology	55	316-943-0222
189	Aspyr Media	90	—	195	Linux World	—	—	63	Orange Micro	60	714/779-2772
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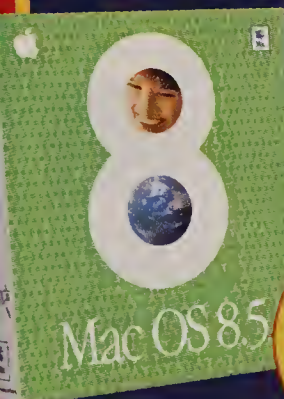
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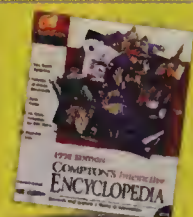


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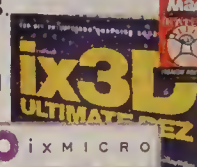
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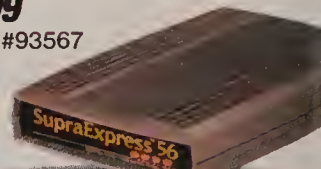
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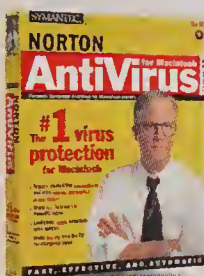


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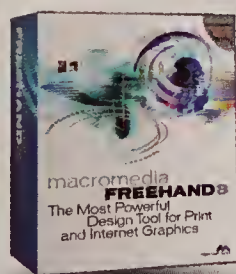
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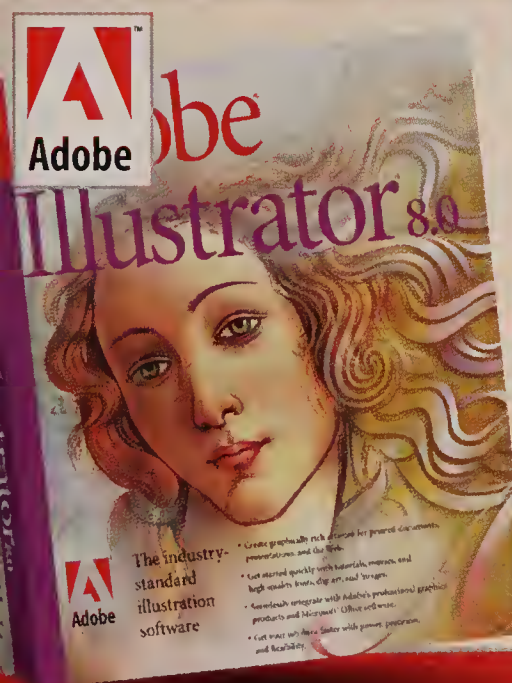
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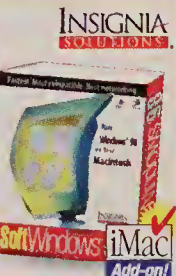


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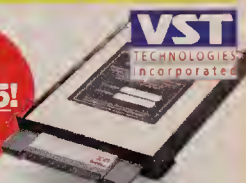
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Only
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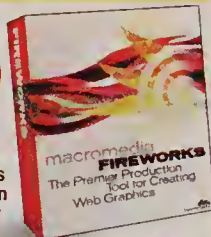
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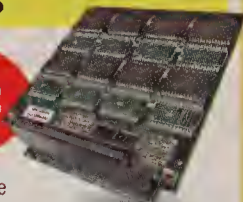
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As low as **\$99⁹⁵!** each,
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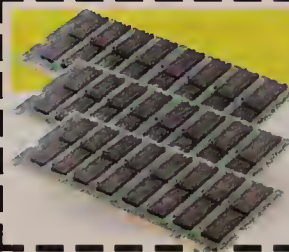
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Apple Power Mac G3 Prices Slashed!

As low as
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was \$1499
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APPLE 720 17" MONITOR
Only **\$499!**
Item # MON0602

APPLE POWER MAC G3 DESKTOP

- 233MHz PowerPC G3 processor • 32MB RAM (192MB max.)
- 4.0GB hard drive • 24X CD-ROM drive • 10Base-T Ethernet

*Reconditioned system. Reconditioned computers may not include original application software.
90 days parts and labor warranty. All sales final. While supplies last.

Many other reconditioned Power Mac G3 models available. Call for details.

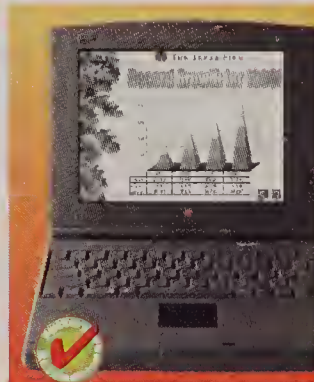
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- 33MHz 68030 processor • 12MB RAM
- 120MB HD • 14.4Kbps modem
- 9" grayscale Supertwist display
- ClarisWorks 3.0

Only
\$299!*
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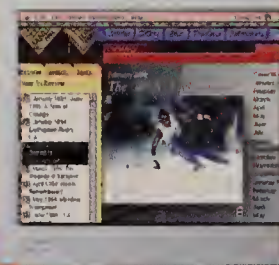


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HITACHI

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- Resolutions up to
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- .28mm dot pitch
- Manufacturer's 3-year warranty

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SONY

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EPSON

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- 9ppm black/5.5ppm color
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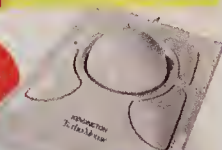


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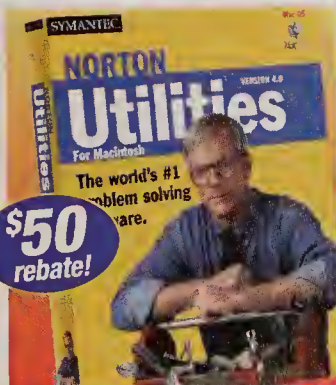
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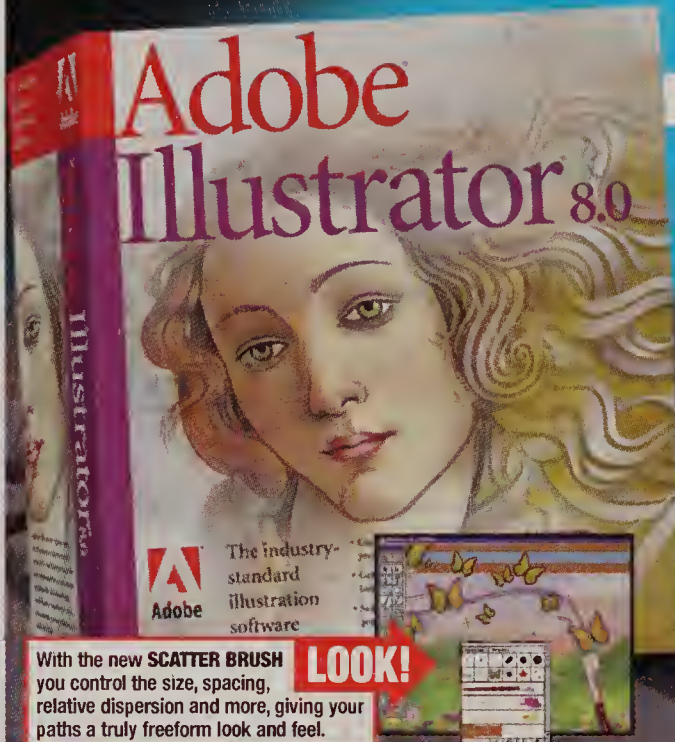
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EPSON

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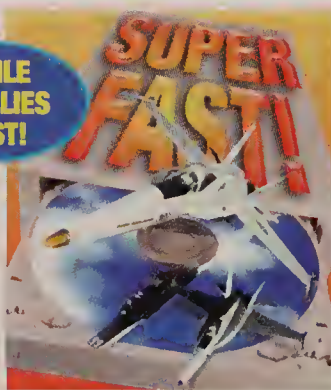
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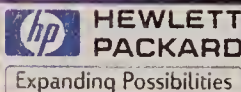
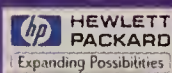
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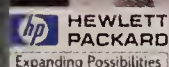
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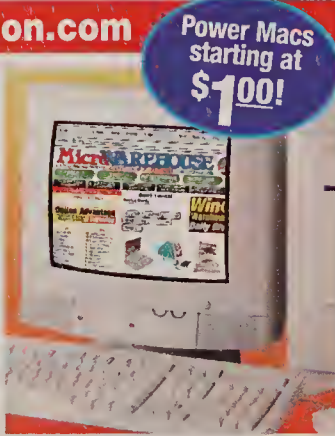
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- 233MHz PowerPC G3 processor/66MHz system bus
- 4.0GB IDE hard drive
- 32MB SDRAM, expands to 128MB
- 512K of backside level 2 cache

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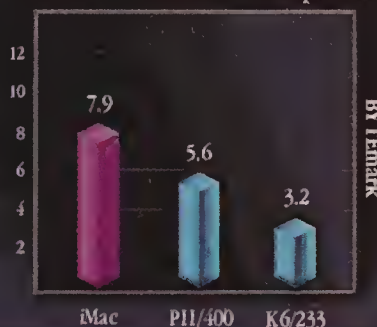
- 15-inch monitor (13.8-inch viewable)/1024x768 max. res.
- 75MHz refresh /28mm dot pitch
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- 2MB SGRAM, expandable to 4MB
- Built-in stereo speakers w/simulated surround sound (SRS)
- Integrated microphone
- Two headphone jacks

Integrated Communications

- Built-in 56K modem
- 10/100Base-T Ethernet
- Two 12Mbps Universal Serial Bus (USB) ports
- 4Mbps infrared technology (IrDA) port

G3 Advantages

Consumer Performance Comparison



Apple optimized this new PowerPC processor specifically for Mac OS 8's multitasking capabilities. Its innovative backside cache technology dramatically increases the processor's performance. And for even more zip, they boosted memory, bus, and hard drive access speeds for dramatically decreased data-transfer times.

Why USB?

USB New universal standard for high-speed peripheral expansion.

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1. Microsoft Office 98 #55871 \$449⁹⁸
2. Act 2.8 #06231 \$149⁹⁸
3. Norton AntiVirus 5.0 #00116 \$63⁹⁸
4. TechTool Pro 2.0 #87067 \$94⁹⁸
5. Norton Utilities 4.0 #04890 \$96⁹⁸
6. Virtual PC 2.1 98 #20634 \$168⁹⁸
7. StuffIt Deluxe 4.5 #05827 \$74⁹⁸
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9. Family Tree Maker Deluxe #80635 \$79⁹⁸
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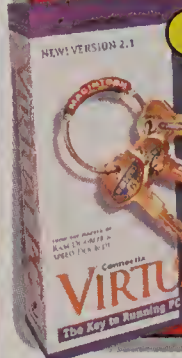
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4310MB	5400rpm	512K	FB34300S	3yr	\$269	\$329
6448MB	5400rpm	512K	FB36400S	3yr	\$350	\$410
8455MB	5400rpm	512K	FB38400S	3yr	\$455	\$515
9100MB	7200rpm	1024K	XP309100S	5yr	\$519	\$579
18200MB	7200rpm	1024K	XP318200S	5yr	\$999	\$1059

ULTRA WIDE SCSI

4550MB	7200rpm	512K	VK304550W	5yr	\$289	\$379
9100MB	7200rpm	512K	VK309100W	5yr	\$489	\$579

ULTRA 2 SCSI

4550MB	7200rpm	512K	VK304550LW	5yr	\$289	\$389
9100MB	7200rpm	512K	VK309100LW	5yr	\$489	\$589
9100MB	7200rpm	1024K	XP309100LW	5yr	\$519	\$619
18200MB	7200rpm	1024K	XP318200LW	5yr	\$999	\$1099

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9100MB	7200rpm	512K	VK309100LV4	5yr	\$519	\$619
18200MB	7200rpm	1024K	XP318200LV4	5yr	\$1029	\$1129

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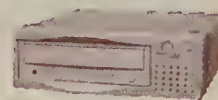
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20GB	40GB	\$2300 DLT4000	\$2575 DLT4000QX	n/a
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100GB	200GB	n/a	\$3879 DLT4500	\$3769 DLT4500R
140GB	280GB	n/a	\$5589 DLT4700	\$5389 DLT4700R
280GB	560GB	n/a	\$10,499 DLT4114LST	\$10,199 DLT4114LSR
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4x12 Plector mechanism, caddy/tray load, 2MB buffer		\$389	\$449
NEW 8x20 tray load, 2MB buffer		\$779	\$839

PRICE BREAKTHRU

CD REWRITABLE	Includes 5 Free ReWritable Disks!	Internal	External
4x2x6 Yamaha mechanism, tray load, 2MB buffer		\$359	\$419
MacWorld Special external with only 1 CD-RW disk (SSS4X2X6XM1)			\$329
NEW 4x4x16 Yamaha mechanism, tray load, 2MB buffer		\$399	\$459
CD-RW starter pack with 5 CD-RW disks and 10 CD-R disks (CDSTARTER)			\$75

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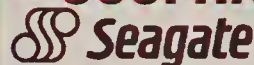
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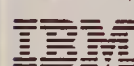
					Internal	External
4520MB	7200rpm	512K	ST34520N	3yr	\$255	\$315
4550MB	7200rpm	512K	ST34573N	5yr	\$455	\$515
6530MB	7200rpm	512K	ST36530N	3yr	\$360	\$420
9140MB	7200rpm	512K	ST39140N	3yr	\$465	\$525
9190MB	7200rpm	1024K	ST39173N	5yr	\$525	\$585
18200MB	7200rpm	1024K	ST118273N	5yr	\$1019	\$1079

ULTRA WIDE SCSI

4520MB	7200rpm	512K	ST34520W	3yr	\$270	\$360
4550MB	7200rpm	512K	ST34573W	5yr	\$450	\$540
6530MB	7200rpm	512K	ST36530W	3yr	\$360	\$450
9140MB	7200rpm	512K	ST39140W	3yr	\$465	\$555
9190MB	7200rpm	1024K	ST39173W	5yr	\$525	\$615
18200MB	7200rpm	1024K	ST118273W	5yr	\$1019	\$1109

ULTRA 2 SCSI

4550MB	7200rpm	1024K	ST34573LW	5yr	\$475	\$585
4550MB	10,000rpm	1024K	ST34502LW	5yr	\$520	\$630
9100MB	10,000rpm	1024K	ST39102LW	5yr	\$690	\$800
9190MB	10,000rpm	1024K	ST39173LW	5yr	\$545	\$655
18200MB	7200rpm	1024K	ST118273LW	5yr	\$1039	\$1149
18200MB	10,000rpm	1024K	ST118202LW	5yr	\$1295	\$1405



4550MB	5400rpm	512K	IBM34560N	5yr	\$275	\$335
9100MB	7200rpm	512K	IBM39130N	5yr	\$500	\$560
18200MB	7200rpm	1MB	IDGHS18Z	5yr	\$1025	\$1085

ULTRA WIDE SCSI

4550MB	5400rpm	512K	IBM34560W	5yr	\$275	\$365
9100MB	7200rpm	512K	IBM39130W	5yr	\$525	\$615
9100MB 10020rpm	1MB	IDVGS9U		5yr	\$589	\$679
18200MB	7200rpm	1MB	IDGHS18U	5yr	\$1025	\$1115
ULTRA-2 SCSI						
9100MB	7200rpm	512K	IBM39130U2	5yr	\$525	\$635
18200MB	7200rpm	1MB	IDGHS18U2	5yr	\$1050	\$1160



ULTRA WIDE SCSI

4550MB	10,000rpm	512K	M3045WP	5yr	\$409	\$499
9100MB	7200rpm	512K	M3091W	5yr	\$499	\$589
9100MB	10,000rpm	512K	M3091WP	5yr	\$659	\$749
18200MB	7200rpm	512K	M3182SW	5yr	\$1029	\$1119

CD ROM DRIVES

			Internal	External
16X - 5 disc changer	Nakamichi	MJS16M/XM	\$189	\$249
32X - Slot load	Pioneer	DRX32SM/XM	\$90	\$150
32X - Tray load	Toshiba	XM6201BM/XM	\$105	\$165
32X - 512K buffer	Plextor	PX32TSM/XM	\$148	\$208
36X - Slot load	Pioneer	DRU706M/XM	\$95	\$155

MISCELLANEOUS

IOMEGA 1GB Jaz	JAZX	\$269
IOMEGA 2GB Jaz	JAZ2X	\$339
SYQUEST 1.5GB Ask about rebate	SYJET1.5MAC	\$279
ADAPTEC Controllers		
PCI Wide Single Channel	A2940MUW	\$245
PCI Wide Dual Channel	A3940MUW	\$469
PCI FireWire + Wide SCSI	AHA8945	\$559
PCI Ultra 2	A2940MU2W	\$399
ATTO Controllers		
PCI Fibre Channel	ATTOPCFC	\$889
PCI Ultra 2 SCSI	ATTOPCIU2	\$425
above w/ RAID software & cable	ATTOPCIU2K	\$609
E4 Cool DVD Kit		
Complete kit for Mac G3 computers	DVDMAC	\$399
Maxoptix Optical Drives		
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5.2GB	T6-5200	\$1499
Sony Optical Drives		
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Fujitsu Optical Drives		
640MB (ask about mail in offer)	DYNAMO640SE	\$329

RAID



These preconfigured RAID's can be run in RAID 0 or 1 mode. The capacity listed is for RAID 0 configuration. In RAID 0, the data is striped across a pair of drives. This is perfect for digital video such as Media 100, TrueVision, Avid, or other applications that require extremely high data transfer rates.

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18GB 7,200rpm	2 9.1GB Seagate Barracuda drives	\$1999	\$1799	
18GB 10,000rpm	2 9.1GB Seagate Cheetah drives	\$2289	\$2089	
36GB 7,200rpm	2 18GB Quantum Atlas drives	\$2949	\$2749	
36GB 7,200rpm	2 18GB Seagate Barracuda drives	\$3049	\$2849	
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50 Pack	\$93/\$89	\$625/\$615	\$139/\$135
100 Pack	\$175/\$169	\$1200/\$1180	\$259/\$249
Budget 5 Pack	\$19/\$17	\$60/\$55	\$24/\$21
Budget 20 Pack	\$36/\$33	\$230/\$220	\$55/\$52
Budget 50 Pack	\$74/\$70	\$525/\$499	\$119/\$109
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4311MB	WD	5400rpm	AC24300	3yr	\$145
6448MB	WD	5400rpm	AC36400	3yr	\$175
6530MB	Seagate	7200rpm	ST36530A	3yr	\$199
7696MB	Quantum	5400rpm	FB307600A	3yr	\$189
8606MB	Seagate	5400rpm	ST38641A	3yr	\$199
9140MB	Seagate	7200rpm	ST39140A	3yr	\$245
10100MB	IBM	7200rpm	IBM10GXP	3yr	\$275
12750MB	Quantum	5400rpm	FB312700A	3yr	\$249
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(PDST34501W) External: \$675
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(PDST19101N) External: \$855
9.1GB Wide \$789
(PDST39102LW) External: \$879
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4.5GB Narrow/Wide \$285
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9.1GB \$465
(Q39100) External: \$525
9.1GB Wide \$595
(Q39100W) External: \$675
7200rpm 1024k buffer 7.9ms Seek

Quantum Stratus
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6.4GB \$355
External: \$425
8.4GB \$475
External: \$545
5400rpm 512k buffer 9.5ms Seek

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9.1GB Wide \$499
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(DCAS32160W) External: \$295
4.3GB \$275
(DCAS34330S) External: \$335
4.3GB Wide \$295
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APS ST 4000	Seagate Medalist Pro, 4340MB, 7200 rpm	299 ⁹⁵	309 ⁹⁵	389 ⁹⁵
APS I 4500	IBM Ultrastar, 4357MB, 7200 rpm	299 ⁹⁵	309 ⁹⁵	389 ⁹⁵
APS ST 6000	Seagate Medalist Pro, 6348MB, 7200 rpm	389 ⁹⁵	399 ⁹⁵	419 ⁹⁵
APS Q 6400	Quantum Fireball ST, 6236MB, 5400 rpm	359 ⁹⁵	369 ⁹⁵	419 ⁹⁵
APS Q 8000	Quantum Fireball ST, 8191MB, 5400 rpm	459 ⁹⁵	469 ⁹⁵	529 ⁹⁵
APS I 9000	IBM Ultrastar 9ES, 8705GB, 7200 rpm	579 ⁹⁵	589 ⁹⁵	649 ⁹⁵
APS ST 9000	Seagate Medalist Pro, 8683MB, 7200 rpm	499 ⁹⁵	509 ⁹⁵	599 ⁹⁵
APS I 18000	IBM Ultrastar 18XP, 17501GB, 7200 rpm	1,199 ⁹⁵	1,209 ⁹⁵	1,299 ⁹⁵
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APS ST 6000 W	Seagate Medalist Pro, 6348MB, 7200 rpm	389 ⁹⁵	399 ⁹⁵	419 ⁹⁵
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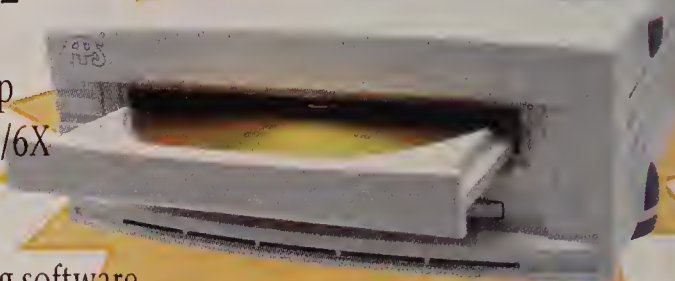
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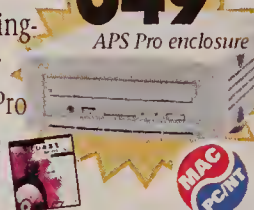
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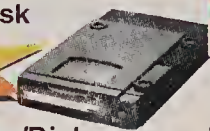
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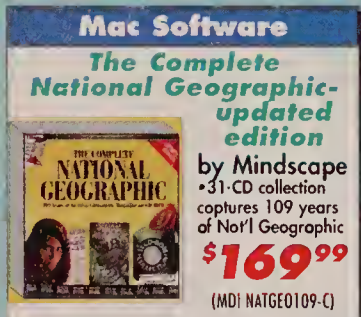


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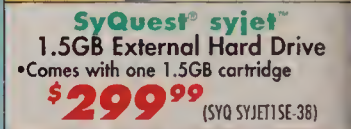
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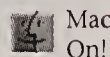
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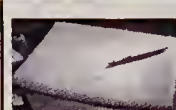
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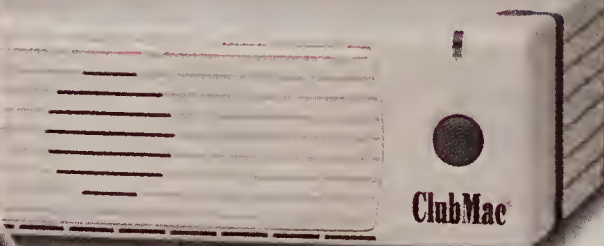
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Medalist drives carry a 3 Year Warranty

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6.5GB Medalist Pro	ST36530N	9.5ms	7200	\$389	\$459
4.5GB Medalist Pro	ST39140N	9.5ms	7200	\$499	\$569
9.1GB Barracuda 9LP	ST39173N	7.1ms	7200	\$569	\$639
18.2GB Barracuda 18	ST118273N	7.1ms	7200	\$1149	\$1219
UltraWide SCSI-3					
9.1GB Barracuda 9LP	ST39173W	7.1ms	7200	\$569	\$659
9.1GB Cheetah 9LP	ST39102LW	12.2ms	10000	\$789	\$879
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18.2GB UltraStar 18XP	59H6591	6.5ms	7200	\$1199	\$1289

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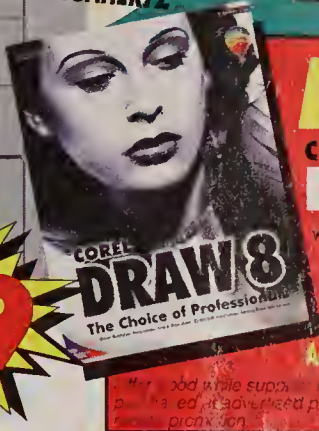
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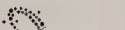
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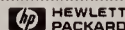
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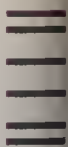
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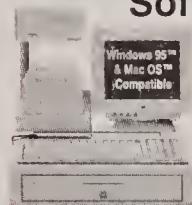


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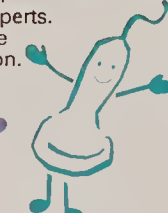
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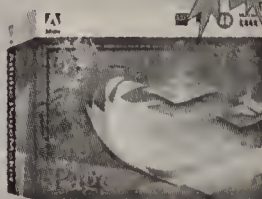
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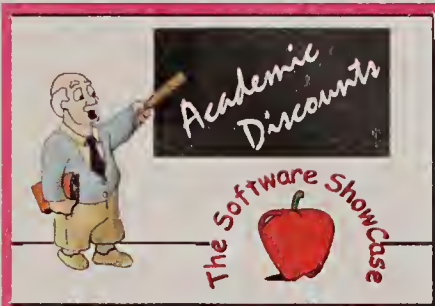
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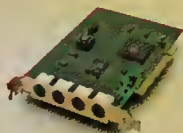
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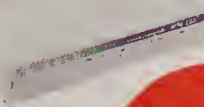
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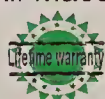
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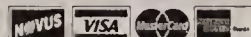
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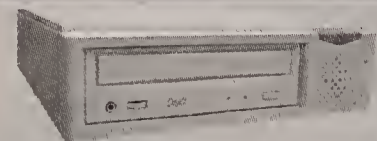
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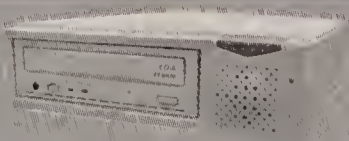
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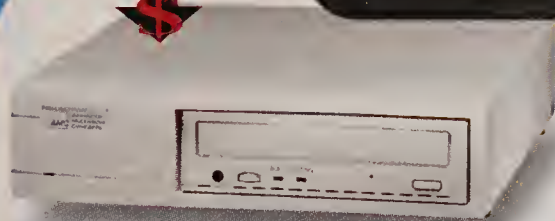
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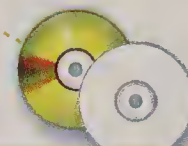
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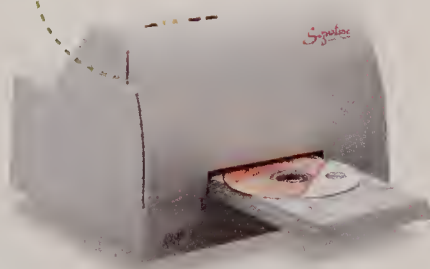
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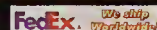
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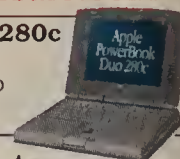
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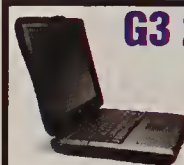
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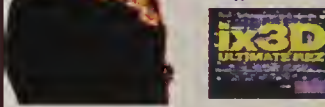
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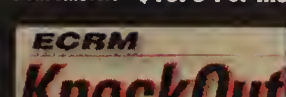


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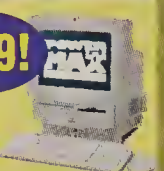
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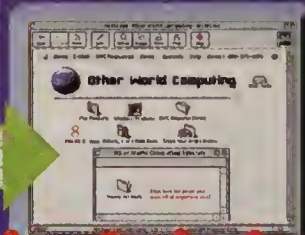
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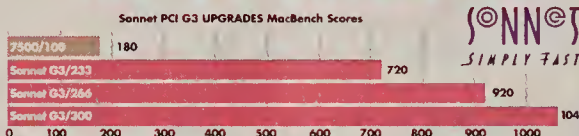
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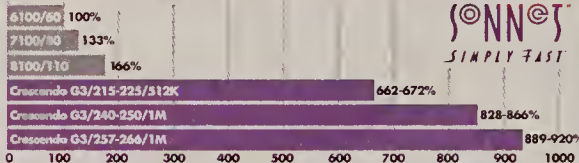


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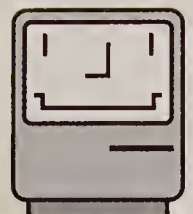
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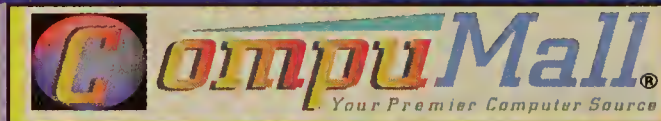
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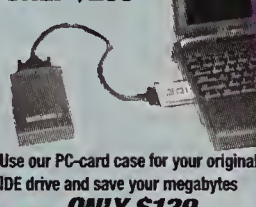
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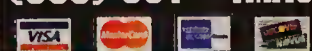
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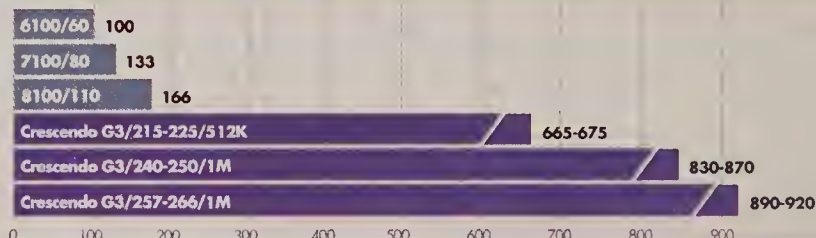


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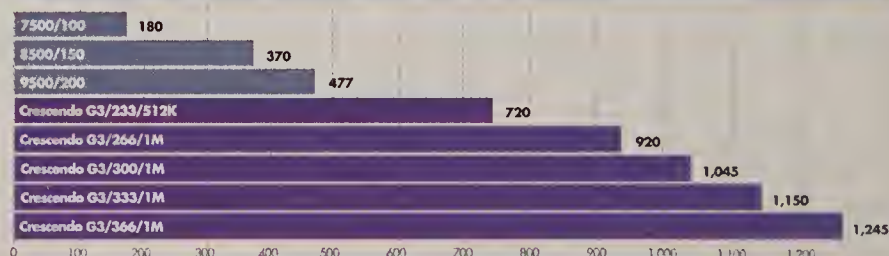
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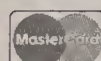
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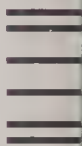
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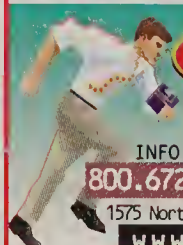
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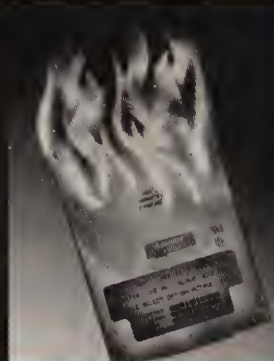
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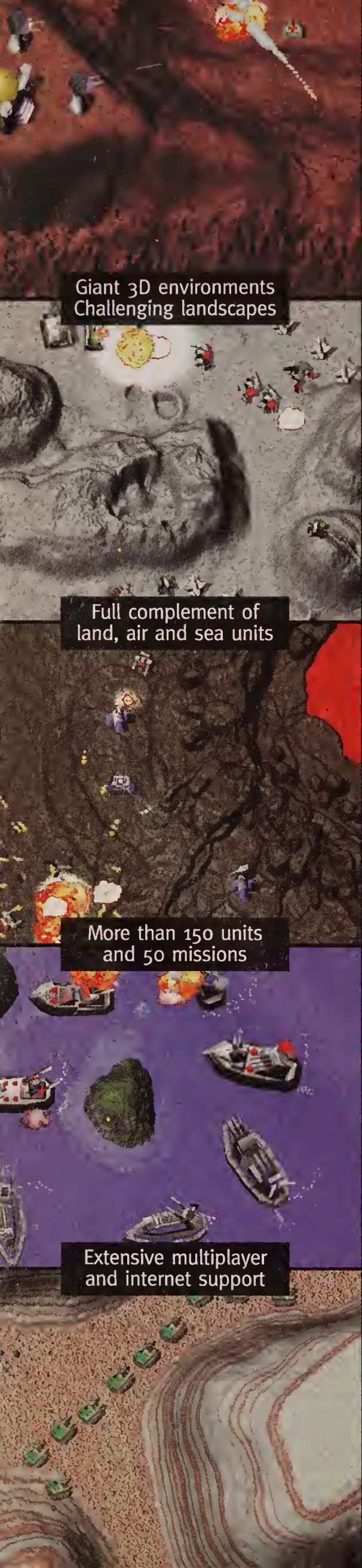
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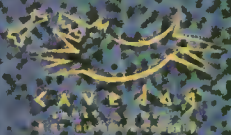
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Macworld ULTIMATE GAMING GUIDE

Macworld's Guide to Network Gaming

Nothin' but Net

BY CHRISTOPHER BREEN

GAMING HAS ALWAYS BEEN A SOCIAL affair. From Og, Gak, and Urd, who rolled boulders at carefully arranged mastodon bones by the local tar pit, to Lord Fanfiral and Lady Margraine, engaged in a trying evening of whist, gamers have gathered in groups. Isn't it odd, then, that until recently, computer gaming was largely a single-person pastime?

Thank heavens those lonely days are gone. Now you can eschew drab, computer-controlled opponents and instead challenge unpredictable, flesh-and-blood adversaries.

But how to go about it? Although most network games are relatively easy to configure, there are a few tricks that will help you on your way to gaming glory. We can't guarantee that you'll become the Monarch of Myth or the Queen of Quake, but we can help you take the first vital step: getting into the game.

Since you can't play computer games without a computer, let's begin there. Most contemporary computer

games simply require some variety of Power Mac, although first-generation systems, such as the 6100, 7100, and 8100, balk at processor-intensive games such as Bungie Software's Myth and MacSoft's Quake.



In order to get the most out of Internet and head-to-head games played over phone lines, outfit your system with the fastest modem possible. For interoffice gaming, on the other hand, chances are you'll be using the existing Ethernet network and won't need to add any more networking equipment to your Mac. Finally, you should have a pair of external speakers or a set of headphones and, if

the game merits it, a joystick—buy one with enough buttons to get the job done (see “Take Control,” *Macworld Ultimate Gaming Guide*, November 1998).

Once you have the right gear, there are several ways you can get in on the action.

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Head-to-Head Gaming

The simplest network connection pits you head-to-head against a single opponent. Head-to-head games are played over a two-way connection, via either a serial or modem-to-modem link.

Although using a serial connection is the least-expensive way to play network games, it requires that the two computers be in close proximity. To make the connection on two Macs, just plug a serial cable (sometimes known as an ImageWriter or StyleWriter cable) into the printer or modem port on each Mac. Turn on AppleTalk for both machines, and the physical connection is complete. Once you're in the game, you'll need to establish a serial link via Apple's Communications Toolbox. In the Connection Settings dialog box, choose Serial Tool as the connection method, select the port the Mac is connected to (Printer or Modem), and set the baud

rate to 57600. The baud rate for both Macs must match.

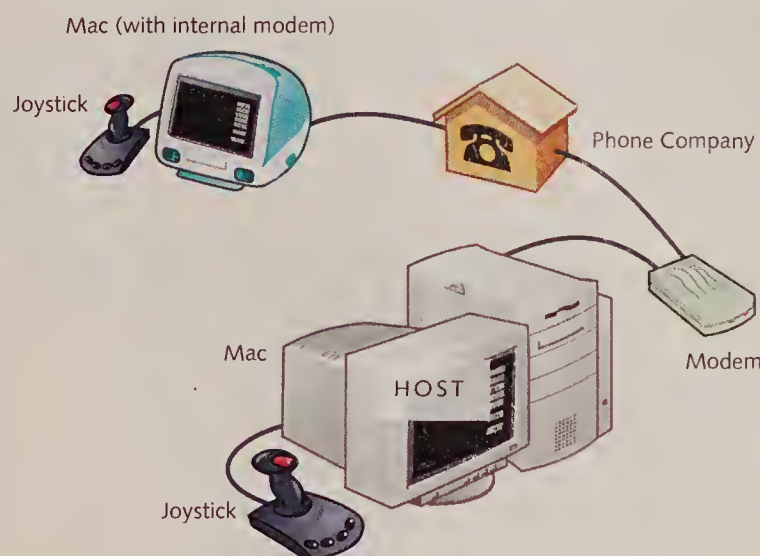
You can also play head-to-head via modem with most modern networked games. Games that support modem play also employ the Communications Toolbox. When you select Modem under a game's networking options, the Connection Settings dialog box appears. In this dialog box, you select the variety of modem you're using from the Modem pull-down menu; the baud rate of your modem; and the port your modem is connected to.

Most modern network games that support modem play allow you to choose whether you'll initiate or receive a call. Initiators enter their opponent's phone num-

ber in the Dial Phone Number field and click on OK to make the connection. If you're the receiver, enter your modem settings and click on OK, and your modem will wait for an incoming call. Unlike serial connections, modems can negotiate differing baud rates, so the two Macs' baud rates need not match.

Some older games, such as Bungie's *Marathon*, don't directly support modem play,

but you can still make the connection using Joe Kloss's *NetLink Remote*, a network extension that allows you to use AppleTalk networking over a modem connection. You can find *NetLink Remote* at www.macdownload.com.



DIAGRAMS BY ARNE HURTY

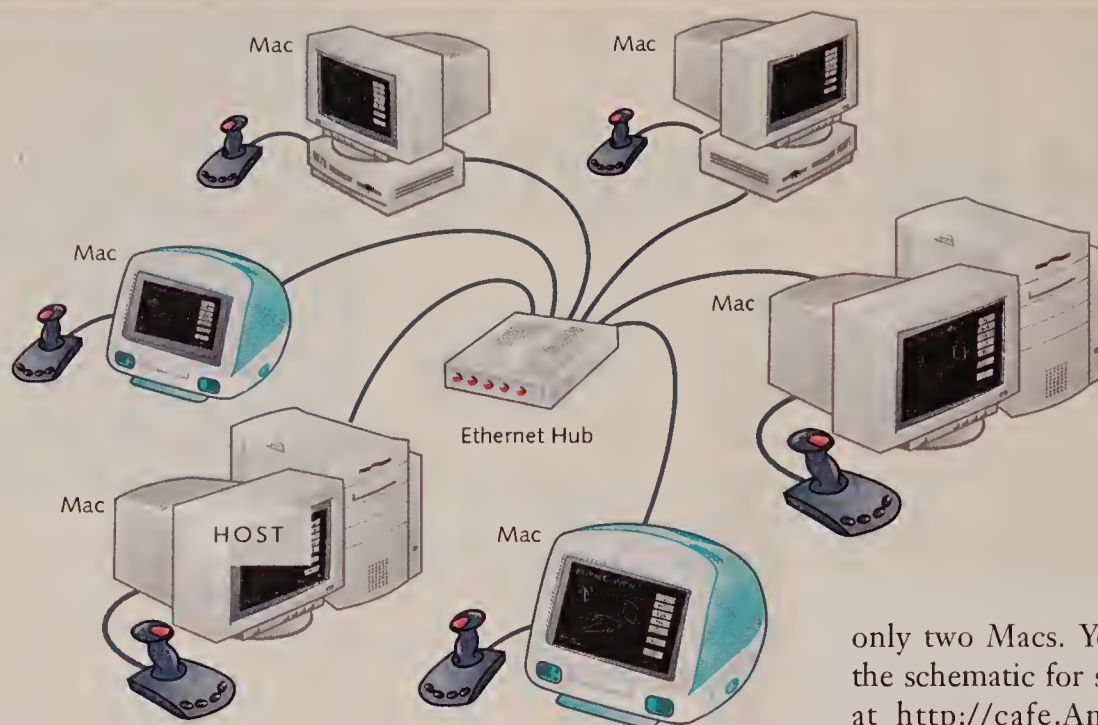
Network Gaming

Head-to-head gaming is fine for two-person grudge matches, but when you want to go up against the heartless harridans in *Human Resources* who denied your workers' comp claim—and do so without venturing onto the Web—network gaming is the means to that end.

Although Mac games such as Blizzard Entertainment's *WarCraft II* can be played across a LocalTalk network, game performance is anything but perky. To get the most out of modern Mac games, you

need a Fast Ethernet connection. If you're playing in an office, you're pretty much set—configure the game and play on, Macduff. If you're trying this at home or setting up a small office, listen up: Most

Power Macs bear some variety of Ethernet connector—either 10BaseT or AAUI. If your Macintosh lacks on-board Ethernet, you can add an Ethernet card if you have a free NuBus, PCI, or—for Power-



Book owners—CardBus slot. Other than Ethernet cables, the final link in the Ethernet chain is a hub—a box that coordinates the packets of informa-

tion that flow among the Macs connected to the network. Alternatively, you can bypass a hub and use an Ethernet crossover cable if you're connecting

only two Macs. You can find the schematic for such a cable at <http://cafe.AmbrosiaSW.com/netgames/network101.html#chap4>.

To configure the Mac OS for networking, consult the step-by-step instructions in Apple's Help system. While configuring the OS can be a little confusing, configuring

most games for a network connection is simplicity itself. After each person has launched a copy of a network game, the person who is designated the host selects the game's Host option. The other players then choose the game's Join option, and the fun begins.

If you're working in an office, your business may have unwittingly provided you with one of the great network-gaming accessories—speaker-phones. Nothing adds to the thrill of the hunt like hearing your victims howl with rage after you've administered Quake's "missile massage" and scattered their virtual giblets from one side of the game to the other. It's a damn shame that the big cheeses in most offices look askance at this type of innocent fun.

Internet Gaming

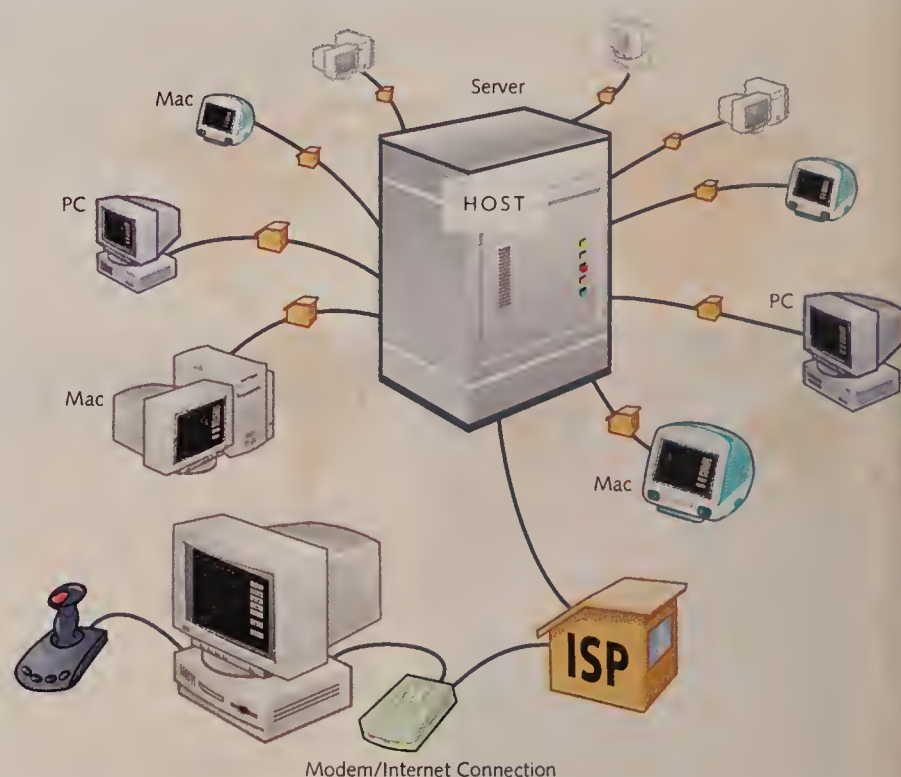
Because the Great Overseers of most businesses frown on game play during office hours, you may need to seek network-gaming challenges elsewhere. Thankfully, you need look no further than the Internet.

Despite what you've heard, Internet gaming isn't a recent phenomenon. For years, people have been playing online versions of such board games as chess, backgammon, and hearts. And text-based Dungeon and Dragons-style fantasy games (known as Multiuser Dungeons, or MUDs) have been around for nearly a decade.

What is new is the number of commercial games that now include an Internet-based multiplayer component. Instead of throwing the gauntlet merely across the cubicle wall, you can now challenge players from across the globe. Your weapons include such games as Myth,

Quake, Blizzard Entertainment's Diablo, WarCraft II, Access Software's Links LS, Graphic Simulations' F/A-18 Hornet, MacPlay's Descent, and MacSoft's Duke Nukem 3D and Master of Orion II.

There are a few different ways to play commercial games across the Internet. Games such as Links LS and MacSoft's Duke Nukem 3D and Shadow Warrior allow you to enter in the TCP/IP address of your fellow players. Once you enter those addresses, the game makes the connection across the Net. Of course, if your TCP/IP address is assigned dynamically (meaning that you're assigned a



new address each time you connect to your ISP), you must first log on to the Internet and then provide your address to your friends. Using chat software to exchange this information in a chat room can save you the

trouble of placing long-distance phone calls to fellow players.

Online games of MacSoft's Quake and Unreal are server-based—meaning that a fast server hosts the game and that players interested in a

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fragfest log on to that server to play the game. To configure Quake on your Mac, select the Multiplayer option, choose Join Game, and enter the IP address of one of the many Quake servers scattered among the continents. You can find a list of Quake servers at www.gameaholic.com/servers/quake/. The Unreal CD-ROM includes an application called UnrealFinder, a utility for locating Unreal games on the Net. You can also play many games on Kali, a popular cross-platform game-server system. Kali can be reached at www.kali.net.

Another variety of server-based games are those hosted by the companies that make them. Two such services are bungie.net and battle.net. Bungie.net is the home of the online version of Myth: The Fallen Lords and Myth II: Soulblighter. Battle.net is Blizzard Entertainment's host service for Net-based Diablo and StarCraft games. The advantage of having games hosted on a central server is that you can always find other people to play with. Additionally, because these servers are the source for online play for specific games, players can be ranked. This allows combatants to carefully select opponents with similar skill levels and makes it possible to hold Champion of the World competitions. Bungie.net can be found at www.bungie.net, and battle.net resides at <http://battle.net>.

Whether you prefer the intimacy of head-to-head exchanges or the kind of multiplayer melees found in a network and in Internet games, this much is clear: Mac gaming is no longer a lonely enterprise. Join us—you're just in time for the game. **m**

Contributing Editor CHRISTOPHER BREEN coauthored *The Macintosh Bible Guide to Games* (Peachpit Press, 1996).

Rules of Engagement

After years of playing against unfeeling computer opponents, it can be difficult for newbie network gamers to remember that the pixelated creatures on their Mac's screen represent human beings—human beings with memories and the capacity to hold a grudge. The days of fragging your friends and gunning down your wingman for the sheer joy of it are over if you expect your network-gaming career to be long and fruitful. Want to stay in the game? Then remember the following:

- Unless it's the point of the game—a Quake Deathmatch or Myth battle, for example—player killing is a strict no-no. If you and your friends have agreed on a cooperative Diablo exploration, it isn't cool to plant a few arrows in your buddy's back.

- Don't take your ball and go home. If

you're participating in a game and losing, it's poor form to break your network connection.

- Cheating is for losers; don't do it. Regrettably, there are a lot of smart folks who can figure out ways to cheat their way through a network game. If you suspect someone of cheating, try talking to that person about it after the game. If that doesn't work and you think this rascalion may be a problem for other players (and you're playing a server-based game, such as Myth or Diablo), consider turning the rogue in to the proper authorities. If the cheater is someone in your office—and you have other reasons for wanting to see the last of the little sneak—anonymously report that person to the boss for playing games on company time, and practice your best "Who me?!" look.

Network Gaming Strategies

FINDING YOURSELF ON THE LOSING END OF MOST NETWORK GAMES? TRY THESE TIPS.

Myth: The Fallen Lords

- Games such as Steal the Bacon and Territories favor those with the fastest troops. If you're playing on a large map, consider trading in your Thrall for speedier forces.

- Remember that Ghòls can pick up and use items littering the landscape. Have your Ghòls pick up Wight remains—they'll use them to paralyze opposing troops and then attack the unmoving enemy.

- Thousands of years of warfare have taught us this much: those who occupy higher ground have the advantage.

Diablo

- Make a backup of your Diablo multiplayer files before you log on to battle.net. That way, if you're killed you can restore your old character.

- There are lots of players who cheat on battle.net. To avoid them, play with your friends and password-protect your games.

- If you have two Macs, play a game via an AppleTalk connection to build up one character's attributes, inventory, and bank account. Sure it seems like cheating, but walking into a battle.net dungeon with a weak character will get you killed every time.

Quake

- As you run away from your enemy, find a 90-degree turn, and just before you make the turn, fire a couple of grenades at the wall in front of you. The grenades will bounce off the wall and, with luck, put the hurt on your pursuer.

- Learn to *rocket jump*. This is similar to Marathon's *grenade hop* technique. Simply run forward, and while facing down, launch a rocket at your feet while jumping. If you have enough armor and health to survive the explosion, you'll be propelled far into the air.

Other 3-D Shooters

- Don't depend on the keyboard alone. You'll find that you're more agile if you use a mouse in addition. Unreal requires that you use the mouse for many actions—you'll grow to appreciate this requirement.

- Learn the levels before engaging in network play. Know where the hidden areas are; where you can pick off your opponents with impunity; and most important, where the armor and health power-ups are located.

- Learn to *circle strafe*. To do so, keep your opponent in sight and simultaneously step left and turn right. This makes you tough to hit while you're pouring on the damage.

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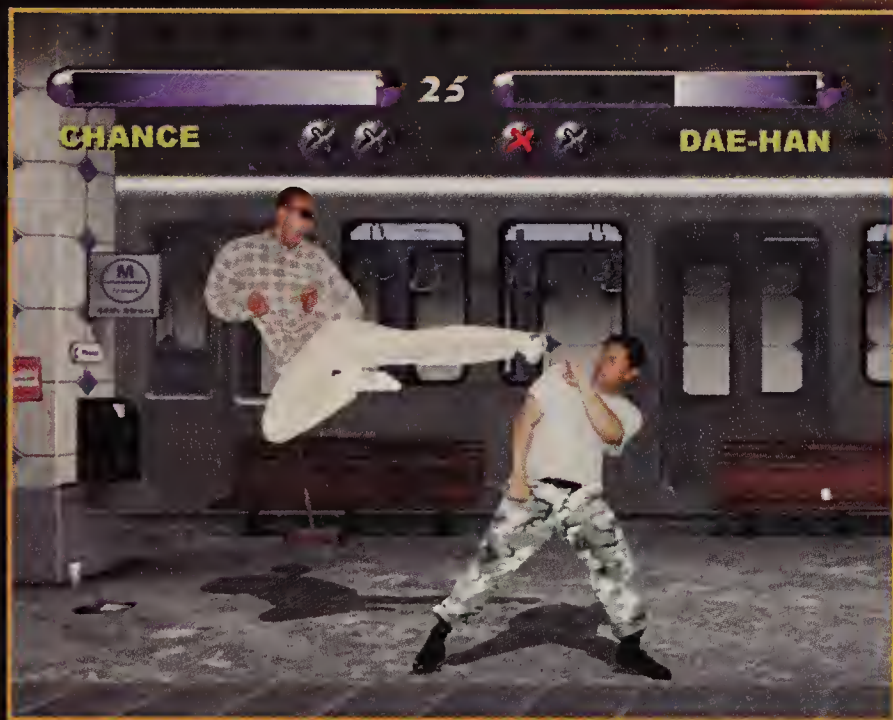
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The Game Room

by Philip Dyer

Game Hall of Shame

HIGHLIGHTING THE LOW POINTS IN MAC GAMING

FOR EVERY GREAT GAME we inaugurate into our Game Hall of Fame each December (see "20 Unforgettable Games," elsewhere in this issue), there's a real stinker or a notable no-show on the Mac platform. And so I submit to you my Game Hall of Shame: a collection of this year's low points in Mac gaming. The envelopes, please.

Rather Just Go Outside Award

Deer Hunter This virtual hunting game invites players to search for deer droppings and then hang around them until a deer comes close enough to shoot—what could be more fun? It was the surprise hit of last year's PC gaming crop, but Mac sales have been sluggish. I guess Mac users are just more selective about how they spend their money . . . otherwise they'd be using PCs.

Be Right Back Award

Pax Imperia: Eminent Domain The original, Mac-only Pax Imperia went cross-platform in this sequel. Unfortunately, its manual became PC-only. And would somebody please tell me whose idea it was to design a real-time network game that takes hours or even days to complete but doesn't allow players to pause for bathroom breaks?

Flash over Function Award

Weekend Warrior These guys spent so much time pushing the graphics envelope on this first-person fighting game—the game required a hardware graphics accelerator before they were de rigueur—that they forgot to make it fun to play. It saddens me to add this Edsel-esque game to the Hall of Shame, but it was a huge disappointment.

No Brain(er) Award

Quake II This immensely popular shooter has been available on the PC for a year, but sadly, executives at id Software announced long ago that they would port Quake II only to the Rhapsody operating system—now there's forward thinking for you. Hopefully they'll change their minds once Mac OS X is available.

Scrooge Award

Oddworld I couldn't turn on my TV or open a magazine during the 1997 holiday season without seeing an Oddworld ad. For just a fraction of its enormous marketing budget, this PC game could have been ported to the Mac as well. So

have been quickly followed by collections of extra levels and new scenarios, which greatly extend their playing time. So where the heck are those expansion packs for the Mac versions?

Unclear on the Concept Award

Jedi Knight Steve Jobs announced at Macworld Expo that our prodigal friends at LucasArts would once again be churning out Mac products. Unfortunately, none of them will be games. The rumor is that a new children's title will use the Jedi Knight game engine to teach kids about math. Sure it's a noble idea, but why not use the Jedi Knight engine to produce games such as . . . oh, I don't know . . . Jedi Knight?

Poor Sports Award

Sports-Game Developers Plus, what's up with the *complete lack* of sports games for the Mac? Every once in a while, a fringe sports game (bowling, pool) comes out, but when was the last time you saw a Mac football, basketball, or baseball game? Yeah, I can't remember one, either.

Take Action!

The good news is that you (yes, you!) can help improve the current state of Mac gaming. Strong iMac sales have already begun to encourage game developers, but you can serve up your own swift kick in their pants by making your desires and opinions heard. Just point your browser to www.macworld.com/features/1298/games.html, and speak your mind to any of the developers on that page. Who knows? You might just get what you want. **m**

Senior Online Editor PHILIP DYER secretly sneaks over to his PC friend's house at night to play Quake II—shbbb!



while all the other kids found copies of Oddworld in their stockings, the Mac children were left out in the cold.

Can't Get Enough Award

Expansion-Pack Developers The PC versions of best-selling games such as Diablo, Duke Nukem 3D, and Quake

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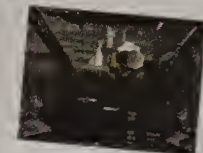
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The Desktop Critic

by David Pogue

Nuclear Browser Wars

NETSCAPE VERSUS MICROSOFT: THERE MAY BE NO SURVIVORS

THIS COLUMN ALWAYS gets entertaining feedback: e-mail, paper mail, wacky business proposals. But no column ever chomped on a raw nerve like "Software Therapy" (*The Desktop Critic*, September 1998), in which I hinted that, for the first time in its life, Microsoft may have come up with a couple of decent products.

"If you love Microsoft so much," wrote one livid reader, "buy a Windows machine and get out of our magazine."

"I was disgusted by David Pogue's transparent shilling for the Microsoft P.R. machinery," wrote another. "How much did they pay him?"

And then there was the anonymous envelope containing a copy of my article—machine-shredded into confetti. "Please recycle the paper and ink used in creating this Microsoft brown-nosing bull****," read the note. Wow, good thing Ted Kaczynski is already in jail.

The hot-button issue seemed to be my discovery that Microsoft Internet Explorer was, at that moment, a more stable and more useful Web browser than Netscape Navigator. In fact, Navigator 4.0.3 (current at the time of the article) crashed so often, I was aching for *any* browser that would simply stay aloft. I was getting dozens of e-mails that asked: "How can I stop Navigator from crashing?" Eventually, I wound up creating a macro with WestCode's OneClick to respond. It typed out: "Navigator is the buggiest piece of work I've ever seen. You have only one choice: Switch to Microsoft Internet Explorer."

Meanwhile, I had indeed begun experimenting with Explorer. Frankly—ladies and gentlemen, start your shredders—it was teeming with unique and innovative features. How can anyone browse the Web without Explorer's text-enlarging buttons? (Fie on thee, designers of 8-point Web

pages!) Wouldn't you like to be able to turn off blinking ads? Build your own strip of Web-page icons? Choose from a menu of sites you've visited on previous days? All these are Explorer-only features I quickly learned to love.

Switching to Explorer does come at a steep price, however: speed. On its worst day, Netscape Navigator still feels twice as fast as Explorer 4.01. Using Explorer was like switching down to a 14.4-Kbps modem. I wept inside, but I just couldn't afford to restart my Mac 99 times a day to accommodate Navigator's crashiness.

And then a horribly embarrassing thing happened: somebody forwarded my

Explorer speed, somehow the pain isn't so bad. (Nowadays, my e-mail macro says: "Use Netscape Navigator 4.0.5 if you want speed and stability; use Internet Explorer if you want features.")

So, great: out of fast, stable, and useful, we can choose only two. That's the downside of the Microsoft/Netscape browser giveaway: it's a suicide pact. It's an insane, unsustainable race for supremacy. Both companies spend millions rushing version after version of these programs to market, ready or not. Neither makes a nickel from them. Both want their browsers running on as many machines as possible. The question is: *why?*

Nobody knows Microsoft's answer. Some have speculated that once Uncle Bill has driven Netscape out of business, he'll begin charging a penny per Web page we visit—and we won't have any other browser alternative. Unfortunately, Microsoft's strategy forces Netscape to play the free-browser game too. Netscape certainly can't charge \$50 for its browser while Microsoft is giving its own program away.

But we, the consumers, aren't the winners. We're forced to swallow whatever Microsoft and Netscape crank out, garbage or not. And as

these free browsers grow buggier and more bloated, we can't exactly vote with our wallets; the Microsoft/Netscape suicide pact prevents any rival browsers from being developed, ever.

So don't worry about my becoming a Microsoft shill. Yes, I admit it: I love Word 98. But look at the bright side: there are still 83,407 other Microsoft products left to loathe. **m**

DAVID POGUE (www.davidpogue.com) is the author of a book about a Microsoft-free palmtop: *PalmPilot: The Ultimate Guide* (O'Reilly, 1998).



"Navigator is buggy" message to a guy he knew at Netscape. The Netscape guy e-mailed me directly. While not denying previous versions' lameness, he politely suggested that I try the very latest: version 4.0.5. He swore up and down that it was rock-solid, that c1net had declared it even more stable than Explorer.

With a heavy sigh, I figured I owed him the courtesy of trying it—and *he was right!* In three months, Navigator 4.0.5 hasn't even *thought* about unexpectedly quitting. I miss my Explorer features, but with my Web pages loading at twice their



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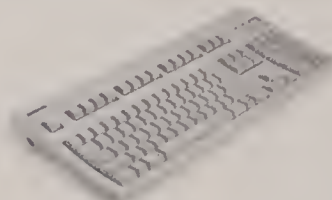
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